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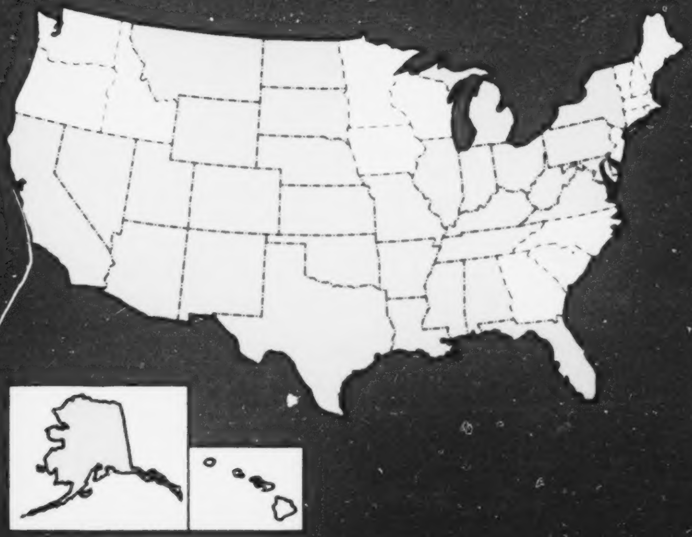
INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA
IPAA
SINCE 1929
1929 1979

# The Oil Producing Industry In Your State



1979

ALABAMA
ALASKA
ARIZONA
ARKANSAS
CALIFORNIA
COLORADO
FLORIDA
ILLINOIS
INDIANA
KANSAS
KENTUCKY
LOUISIANA
MARYLAND
MICHIGAN
MISSISSIPPI
MISSOURI
MONTANA
NEBRASKA
NEVADA
NEW MEXICO
NEW YORK
NORTH DAKOTA
OHIO
OKLAHOMA
PENNSYLVANIA
SOUTH DAKOTA
TENNESSEE
TEXAS
UTAH
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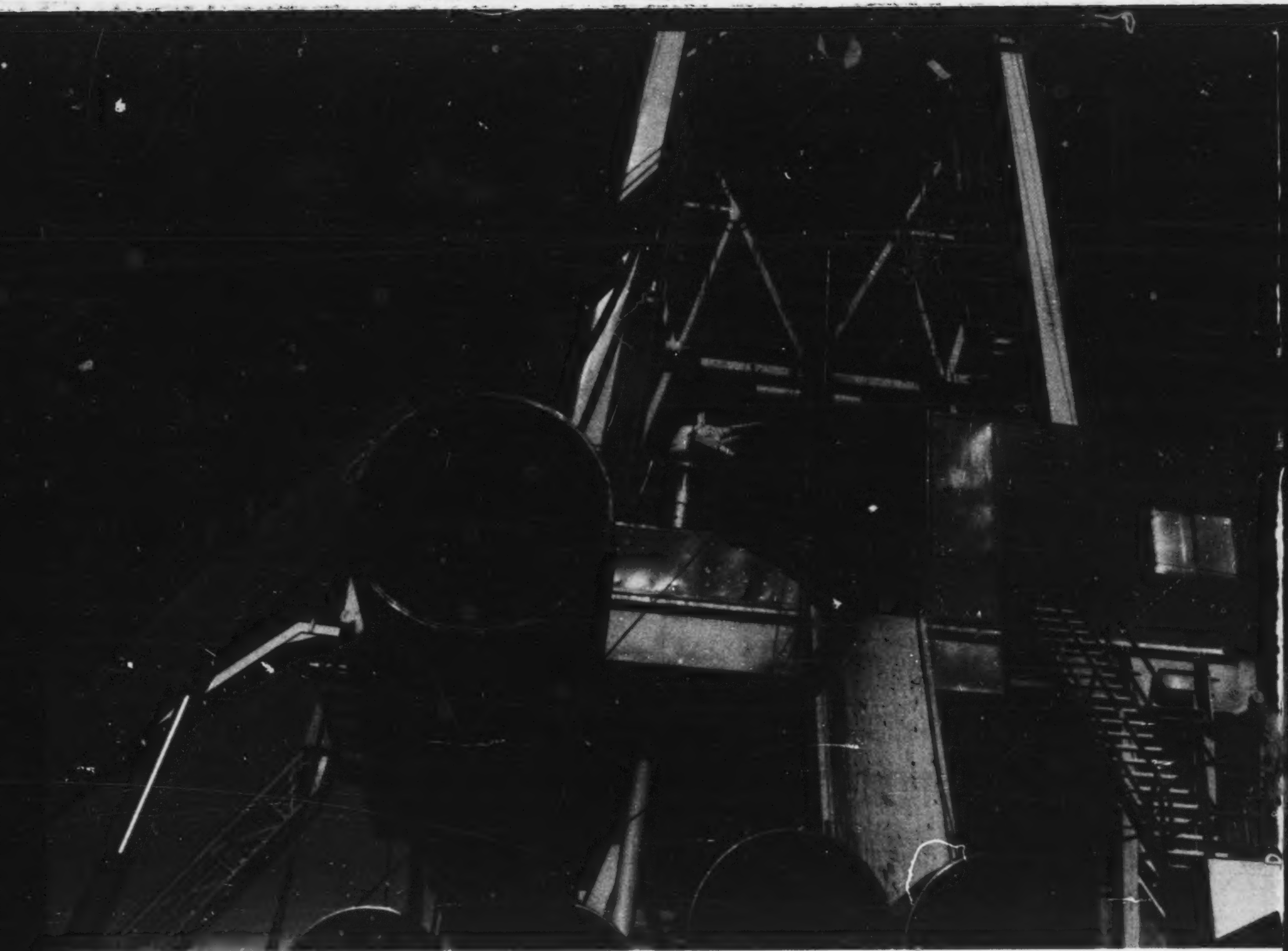

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A 5425-1

# THE OIL PRODUCING INDUSTRY IN YOUR STATE

## 1979 EDITION

### AN IPAA PUBLICATION

## TABLE OF CONTENTS

**INTRODUCTION** .......... 6

**OIL PRODUCING STATE STATISTICS:**

Total U.S. Statistical Data .......... 12
Individual State Data .......... 18

**INDIVIDUAL STATE INFORMATION:**

Alabama 18
Alaska 20
Arizona 24
Arkansas 26
California 28
Colorado 32
Florida 36
Illinois 38
Indiana 40
Kansas 42
Kentucky 44
Louisiana 46
Maryland 48
Michigan 52
Mississippi 54
Missouri 58
Montana 60
Nebraska 62
Nevada 64
New Mexico 66
New York 68
North Dakota 70
Ohio 72
Oklahoma 74
Pennsylvania 76
South Dakota 78
Tennessee 80
Texas 82
Utah 84
Virginia 86
West Virginia 88
Wyoming 90

**STATISTICAL TABLES:**

Total Wells Drilled in the U.S. 1969-1978 .......... 50
Geophysical Activity in the U.S. 1969-1978 .......... 93
Estimated Productive and Nonproductive Acreage Under Lease 1977-1979 .......... 92
Rotary Rigs Active in the United States 1969-1978 .......... 94
Total New Field Wildcat Wells Drilled in the U.S. 1969-1978 .......... 99
Total Exploratory Wells Drilled in the U.S. 1969-1978 .......... 100
Total Wells Drilled for Oil and Gas All Time to January 1, 1979 .......... 102
Estimated Cost of Drilling and Equipping Wells 1976 .......... 104
Estimated Cost of Drilling and Equipping Wells 1977 .......... 105
Stripper Wells 1968-1977 .......... 107
United States Crude Oil Production 1969-1978 .......... 108
Petroleum Production and New Reserves Found All Time to December 31, 1978 .......... 109
Estimated Average Number of Employees in the Petroleum Industry 1978 .......... 114
Estimated Consumption of Petroleum Products 1977 .......... 115

**STATISTICAL SUMMARY OF THE PETROLEUM PRODUCING INDUSTRY 1949-1978** .......... 116

**REFERENCE DATA:**

Sources of Data .......... 2
Key Definitions .......... 10
Advertisers' Index .......... 118

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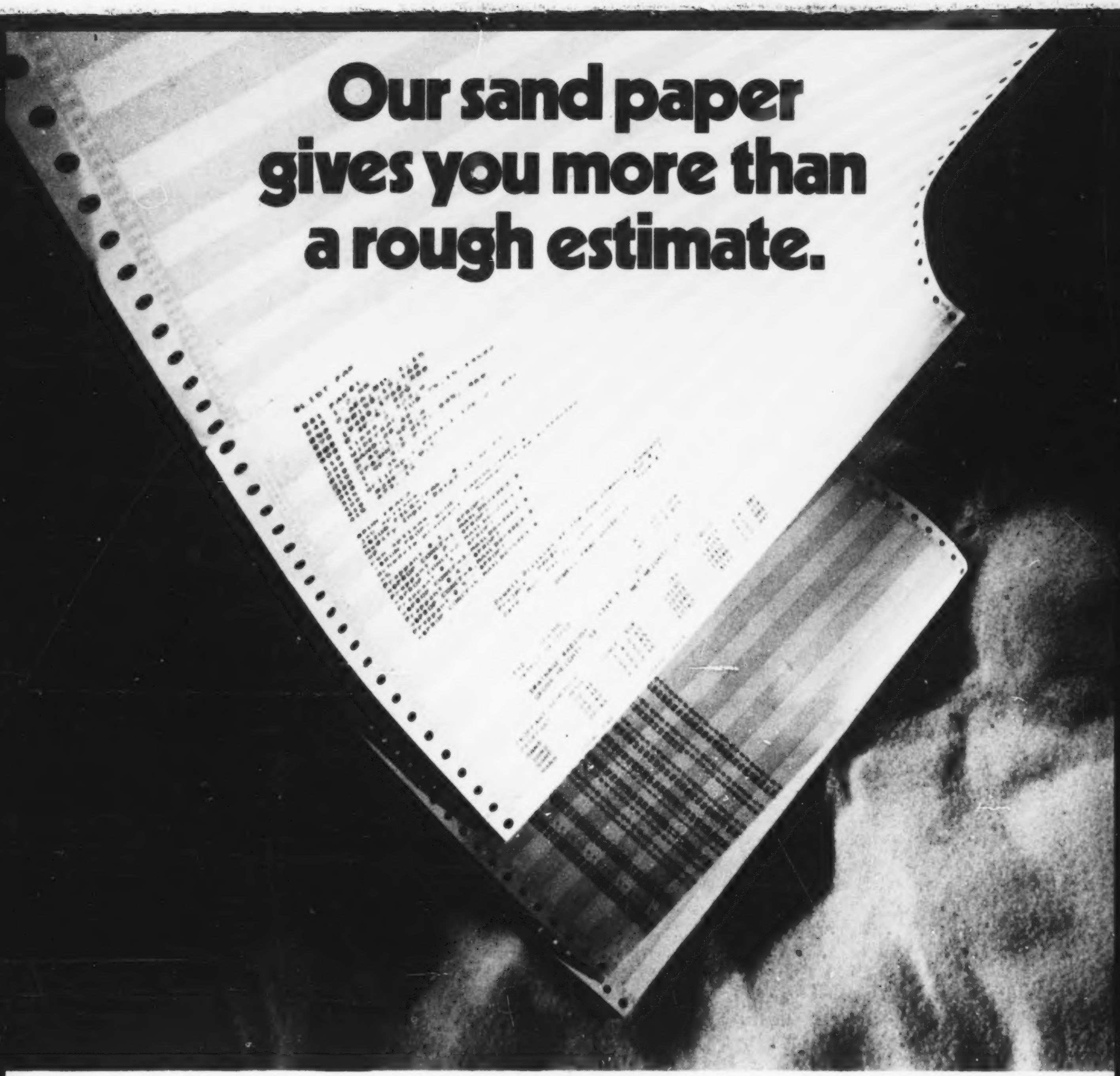
# SOURCES OF DATA

The data in this publication have been collected from various published sources including, where necessary, estimates based on the best information available. The individual sources, to which credit is gratefully acknowledged, are as follows:

**Data Re Producing States**

| Line No. | |
|---|---|
| 1 | World Almanac |
| 2 | Various state and industry sources |
| 3 | World Almanac |
| 4-5 | Estimated by IPAA from various state and industry sources such as Petroleum Information Corporation |
| 6 | Sum of lines 4 and 5 divided by line 3 |
| 7-11 | Estimated by IPAA |
| 12 | Sum of lines 9, 10, and 11 |
| 13-14 | U.S. Department of Energy based on 1977 values |
| 15 | State Agencies cooperating with the U.S. Bureau of Labor Statistics |
| 16-17 | Energy Information Administration, World Oil, Arnold & Kemnitzer, World Petroleum Report, AIME Statistical Yearbook |
| 18 | Bureau of Commerce and state and local governments |
| 19-20 | Energy Information Administration, World Oil, Arnold & Kemnitzer, World Petroleum Report, AIME Statistical Yearbook |
| 21 | Stripper Well Report, Interstate Oil Compact Commission and National Stripper Well Association: based on 1977 production |
| 22-24 | World Oil and other industry sources |
| 25 | Energy Information Administration except some small states estimated by IPAA and 1978 Natural Gas Liquids Production calculated by IPAA |
| 26-27 | American Petroleum Institute and American Gas Association |
| 28-30 | World Oil and American Petroleum Institute |
| 31 | World Petroleum Statistical Yearbook, Oil and Gas Journal, International Oil Scouts Association |
| 32 | Hughes Tool Company |

Individual state data may not add to United States total in all cases since data for some miscellaneous states are not available.



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# INTRODUCTION

The 1979 edition of "The Oil Producing Industry In Your State" commemorates two significant events: the 50th anniversary of the Independent Petroleum Association of America and the 120th anniversary of the commercial discovery of oil by Colonel Drake in the United States.

The IPAA was founded 50 years ago in 1929 in Colorado Springs because petroleum imports were increasing and there was a tremendous over-supply of crude oil in the United States. Crude oil stocks had risen to more than 535 million barrels and production was being curtailed. Total imports were averaging about 300,000 barrels per day, supplying about 10 percent of our total demand. In 1978, imports averaged 8,228,422 barrels per day, supplying over 42 percent of our total demand.

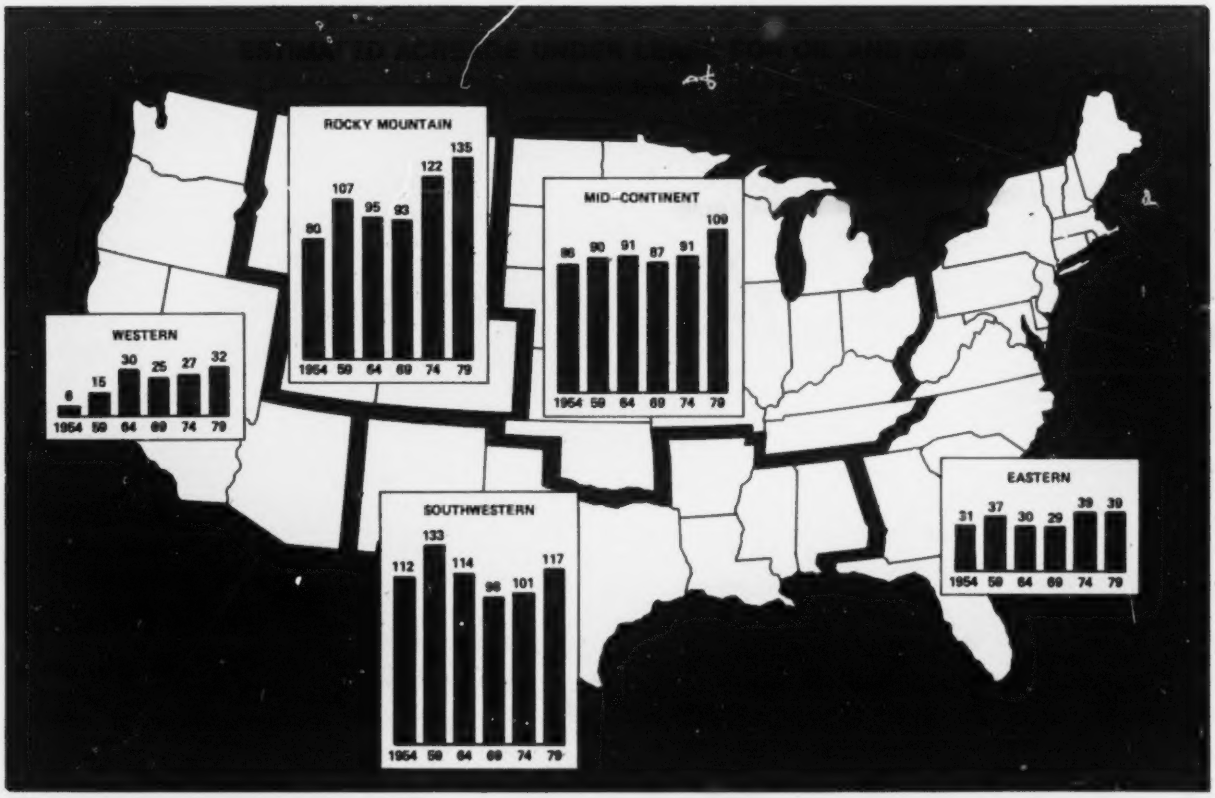
Throughout its 50 year history, the IPAA has never advocated the total elimination of petroleum imports. Rather it has fought diligently to preserve a definite share of the domestic market for domestic producers and to prevent over-dependence on foreign oil. These domestic independent producers provide 38 percent of the crude oil produced, find over 53 percent of the oil and gas reserves, find 75 percent of the new fields, and drill over 89 percent of the wildcat wells.

The most recent plan suggested by the President of the United States to relieve today's critical energy shortage places almost all of the emphasis on conservation and the development of synthetics and alternative sources of energy. While these programs have merit for the long term, there is little chance they can be developed in time to be of much assistance in the years immediately ahead. The only realistic answer for the short term is to encourage the exploration for and the development of our domestic conventional oil and gas resources.

The United States Geological Survey estimates that there are large quantities of oil and gas still to be found. USGS has recently added 10 billion barrels to their estimate of our potential resource base because of developments in the overthrust belt. Even before this addition, the Survey has estimated, based on 1976 production rates, that the United States resource base was equivalent to between 35 and 60 years supply.

Another indication that there are still vast reserves of oil and gas to be found in the United States is the tremendous area which is under lease for oil and gas. The Independent Petroleum Association conducts an annual survey to collect this acreage-under-lease data for publication in "The Oil Producing Industry In Your State."

The latest survey collected data as of January 1, 1979 and indicated that a total of more than 432 million acres, or 19.1 percent of the entire land area in the



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The latest survey collected data as of January 1, 1979 and indicated that a total of more than 432 million acres, or 19.1 percent of the entire land area in the United States, was under lease for oil and/or gas at the beginning of this year. Of this 432 million acres, almost 384 million are in untested non-productive areas. Over 48 million acres have been proven productive as of January 1, 1979.

As can be seen in the following chart, this acreage is scattered throughout the United States. However, the Rocky Mountain, Southwestern, and Mid-Continent areas (P.A.D. Districts II, III, and IV) contain the largest amount of acreage under lease. Individual state pages contain this data for each of the 32 producing states.

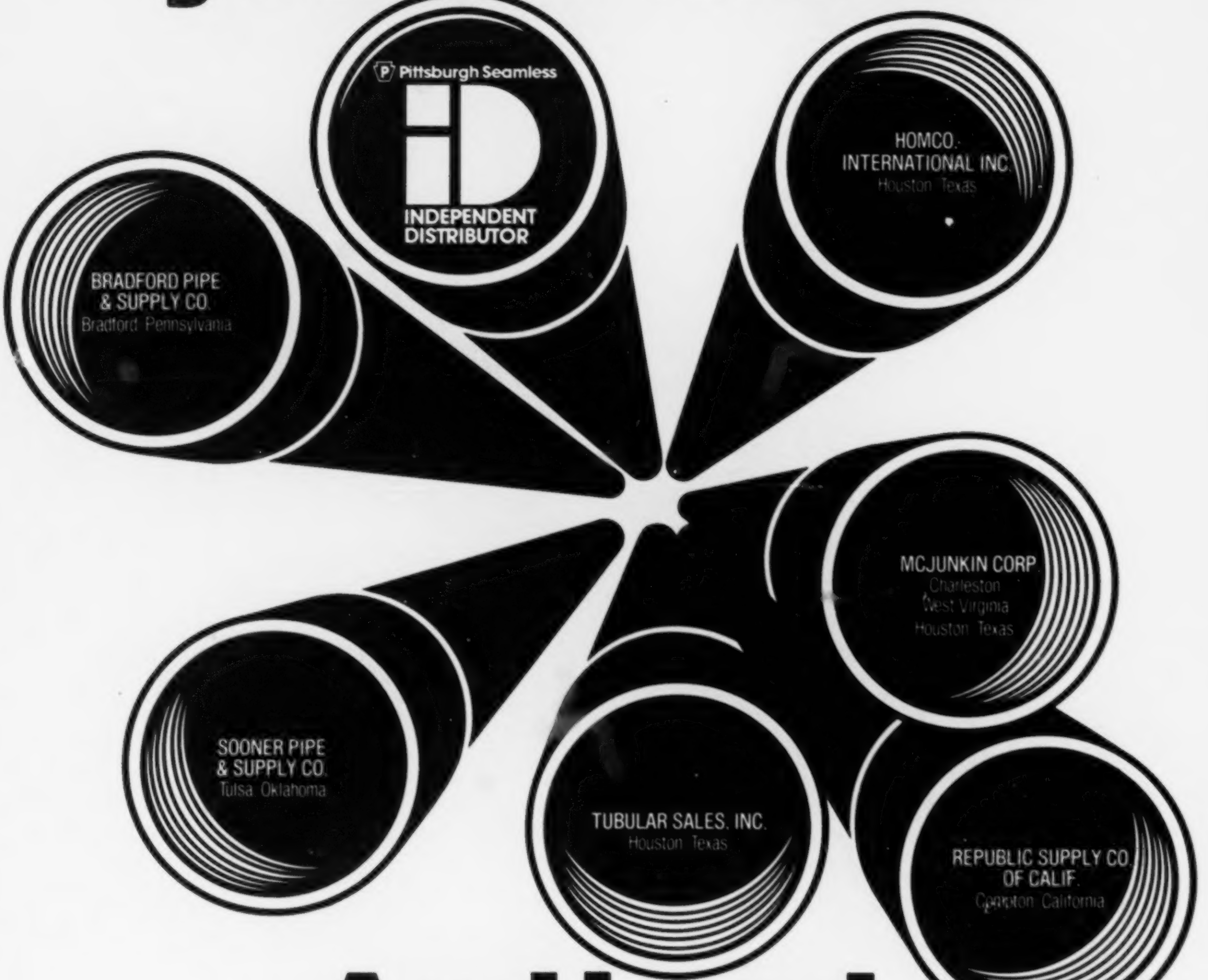
Much of the area under lease in the Rocky Mountain States is on public, acquired, and Indian lands controlled by the Federal Government. In the United States more than 113 of the 432 million acres under lease are on these government-controlled lands. With an estimated 67 percent of the Federally controlled lands already removed from potential exploration, it is important that the remaining lands be kept available for oil and gas exploration if we are to find the oil and gas required to alleviate the current energy crisis.

Besides the acreage-under-lease figures, IPAA collects data on industry employment and severance and production taxes. This information is not readily available from any sources outside the state and/or local governments and associations. The employment survey indicates that in 1978 the industry provided 1,637,150 jobs, ranging from the extraction of oil and gas to the dispensing of refined products at gasoline service stations. The third survey, state and local severance and production taxes, indicates that in the 25 states collecting taxes from the industry a total of $2,135,153,867 was collected. This money does provide assistance to states which otherwise might have to curtail certain public services or raise revenues through alternative sources.

In addition to these survey figures, all available facts pertaining to the industry in the individual producing states are detailed on two pages for each state. Some highlights of notable significance are (1) for the second consecutive year crude oil production increased from 8,245 thousand barrels daily in 1977 to 8,701 in 1978. Production in six individual states, Alabama, Alaska, Florida, Michigan, Nevada, and South Dakota, was at an all time high in 1978. (2) The average number of rotary rigs active in 1978 was higher than in any year since 1957. (3) The wildcat well completions, 10,677, were the highest since 1964 and total well completions, 48,513, were higher than in any year since 1959. (4) A new record for the deepest producing well in the U.S. was set in Texas. Three other states, Florida, Indiana, and North Dakota, also set records in 1978 for deepest producing wells within their states. Following these individual state pages are a number of statistical tables containing important historical information.

It is the sincere hope of IPAA that readers of this book will find the data useful as a source of information about the U.S. oil and gas producing industry. If more information is desired or if there are any questions regarding the contents of the book, please direct your inquiries to the Association and every effort will be made to provide answers.

# You need it, your I.D. has it.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# KEY DEFINITIONS

CRUDE OIL — Hydrocarbons, in liquid form, of such a variety of mixtures that no two are the same. The two major categories are sour, with 1 percent or more sulfur, and sweet, with less sulfur.

NATURAL GAS — Hydrocarbons, in gaseous form or mixed with crude oil, classified as associated, dissolved, or non-associated.

NATURAL GAS LIQUIDS — Hydrocarbons found with natural gas and liquefy at the surface.

RESERVOIR — Rock, within a sedimentary basin, of such porous space as to permit oil or natural gas and water to move freely. The hydrocarbons are found within the reservoirs in local accumulations known as traps.

FIELD — An area which consisting of a single or multiple reservoirs encompasses a group of oil and gas wells.

GEOPHYSICAL ACTIVITY — The search for those geologic structures which are potential petroleum bearing formations by means of geophysical devices.

CREW MONTHS — Time measure of the geophysicist search for petroleum.

ACREAGE UNDER LEASE — The amount of land leased by the owner (private citizen, state of federal government) for the search for petroleums. If the acreage leased proves productive, the leasee must also pay to the mineral-rights owner a Royalty Payment, usually ⅙ to ⅛ of actual production.

DERRICK — A tapering tower (of open steel frameswork today) built over a well site to provide support for the drilling equipment.

ROTARY RIG — A derrick equipped with rotary drilling equipment capable of drilling a bore hole (as opposed to a cable tool rig which drills on a combination hammer-suction principle).

WELL — A hole drilled to find or produce crude oil or natural gas or to provide related services. It is classified as oil, gas, dry, stratigraphic, or service.

EXPLORATORY WELL — Either an oil, gas, or dry hole drilled to discover an oil bearing formation or its limits.

DEVELOPMENT WELL — Either an oil, gas, or dry hole drilled in an area known to be productive.

OIL WELL — An exploratory or development hole drilled for the production of crude oil.

GAS WELL — An exploratory or development hole drilled for the production of natural gas.

DRY HOLE — An exploratory or development hole which produces no oil or gas so little as to make if financially impossible to complete. Also known as a 'duster.'

NEW FIELD WILDCAT WELL — One of the five subdivisions of an exploratory well, a new field wildcat well is one drilled in an area where there has been no previous production. Named such, according to lore, because wildcat referred to an area where the only inhabitants were wildcats.

STRIPPER WELL — A well which pumps or 'strips' less than 10 barrels of oil per day.

MARGINAL WELL — A well which is capable of production only by artificial lift and whose production when so equipped is limited.

COMMERCIAL WELL — A well whose net production is sufficient that it could be expected to pay out and yield a profit for the operator within a reasonable time.

OIL COUNTRY TUBULAR GOODS — Casing, tubing, and drill pipe used in drilling for and producing hydrocarbons.

BARREL — The standard measure for petroleum. Originated from the early method of transporting oil in the 1860's by means of a wooden barrel. In the United States one barrel is equal to 42 U.S. gallons; a Canadian barrel is equal to 35 Imperial gallons.

CUBIC FEET — The standard measue for natural gas.

PIPELINE — A tube or system of tubes which transports oil or gas in an extremely economical and easy method because the petroleum can go from the well to storage tank or to the refinery.

TANKER — An ocean-going ship which hauls crude oil or petroleum products in bulk and whose size is measured in deadweight tons (DWT), the total tonnage (in long tons) of cargo, fuel, water, and stores the ship can carry. The size of a tanker has grown with the demand: up to the 1950's the T-2 with 16,500 DWT capacity was standard; today Very Large Crude Carriers (VLCCs) with 200,000 DWT and Ultra Large Crude Carriers (ULCCs) with 350,000 tons are used (one long ton = 7.5 barrels).

REFINERY — A plant for separating crude oils and converting these major components into finished products.

PRODUCT — Any commodity made from oil or gas.

*All credit for the above definitions is given to the following sources: American Petroleum Institute, "Standard Definitions for Petroleum Statistics," 1st Ed.; Langenkamp, R. D., "Handbook of Oil Industry Terms and Phrases"; Mobil Oil, "The Language of Oil",; and Williams, H. R. and C. J. Meyers, "Manual of Oil and Gas Terms," 2nd Ed.*

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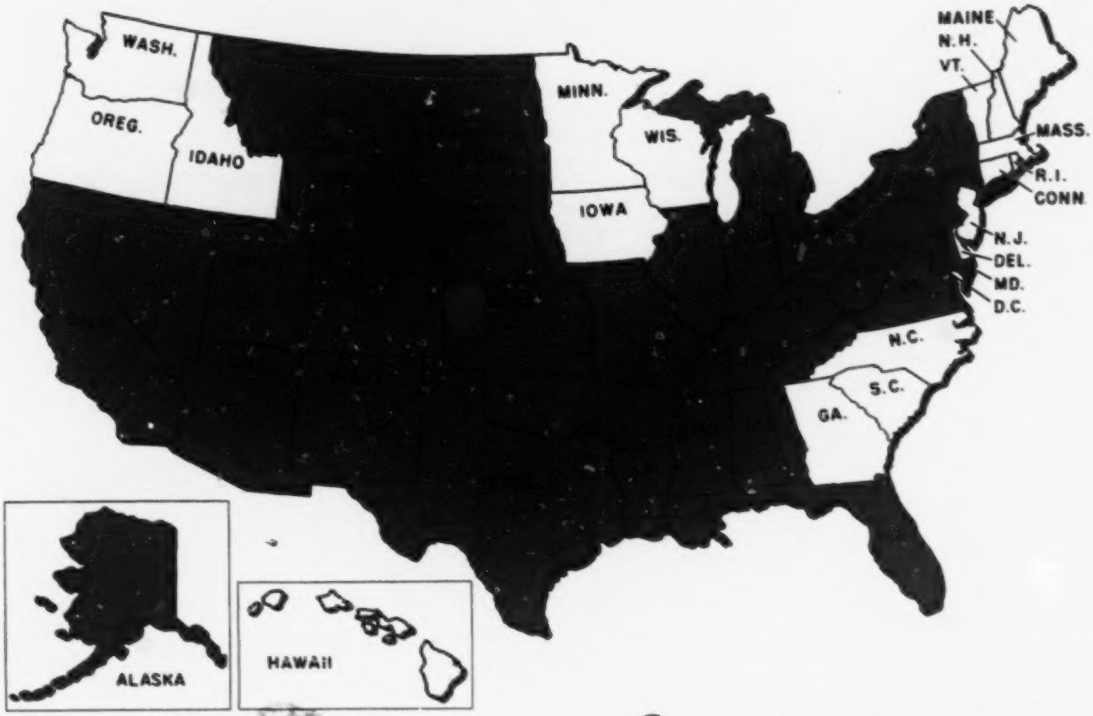
# The Oil Producing Industry in THE UNITED STATES



● States with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of States | | | 50 |
| 2. | Number of States with oil and/or gas production | | | 32 |
| 3. | Total land area of States (acres) | | | 2,263,587,200 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 48,489,139 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 383,622,128 |
| 6. | Percent of total land area productive or leased | | | 19.1% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 372,073,533,766 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 9.00 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 28,583,240,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 4,441,735,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 17,616,235,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 50,641,210,000 |
| 13. | Percent petroleum value to total all minerals | | | 59.2% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st | Crude Petroleum | | |
| | 2nd | Natural Gas | | |
| | 3rd | Coal | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 428,760 |
| 16. | First year of production of crude oil | | | 1859 |
| | natural gas | | | 1881 |
| 17. | First recorded production of crude oil (barrels) | 1859 | | 2,000 |
| | natural gas (Mcf) | 1882 | | 600,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 2,135,153,867 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .......... 1970
20. Crude oil produced in year of largest production (barrels) .......... 3,517,450,000
21. Percent of crude oil produced by stripper wells .......... 13.0%
22. Number of producing wells at end of 1978:** Crude Oil .......... 516,238
Gas & Condensate .......... 153,655
Total .......... 669,893
23. Average daily production of crude oil per well at end of 1978 .......... 19.9
24. Percent of wells pumping or on artificial lift .......... 93.8%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 8,347,737 | 8,131,641 | 8,244,562 | 8,701,170 |
| Natural Gas Liquids | 1,632,762 | 1,603,948 | 1,617,685 | 1,567,359 |
| Total Petroleum Liquids | 10,007,499 | 9,735,589 | 9,862,247 | 10,268,529 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 1,347,256 | 595,666 | 1,942,922 | 10,734,877 |
| Estimated Production | 3,029,898 | 664,179 | 3,694,077 | 19,311,048 |
| Net Change in Reserves | −1,682,642 | −68,513 | −1,751.155 | −8,576,171 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 149,512,178 | 24,382,241 | 173,894,419 | 758,076,753 |
| Total Production | 121,708,418 | 18,456,389 | 140,164,807 | 557,775,046 |
| Proved Reserves Dec. 31, 1978 | 27,803,760 | 5,925,852 | 33,729,612 | 200,301,707 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .......... *Dry Hole* 31,441
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas* 26,518
30. Wells and footage drilled in 1978:***

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 1,125 | 10.5 | 16,650 | 44.0 | 17,775 | 36.7 |
| Gas Wells | 1,603 | 15.0 | 11,461 | 30.3 | 13,064 | 26.9 |
| Dry Wells | 7,949 | 74.5 | 8,269 | 21.9 | 16,218 | 33.4 |
| Service Wells | 0 | 0 | 1,456 | 3.8 | 1,456 | 3.0 |
| Total Wells | 10,677 | 100.0 | 37,836 | 100.0 | 48,513 | 100.0 |
| Avg. Depth per Well | 5,923 | | 4,444 | | 4,770 | |
| Total Footage | 63,234,745 | | 168,159,236 | | 231,393,981 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 1,465,385 | 59.2 | 250,244 | 10.1 | 761,303 | 30.7 | 2,476,932 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .......... 2,259

**Includes for U.S. Federal Waters 3,429 Oil and 2,818 Gas Producing Wells.
***Includes for U.S. Federal Waters and Idaho 23 Wildcat Wells, 13 Development Wells.

**High strength for deep performance.**

When you need maximum strength and ductility, you need CF&I seamless casing and tubing.

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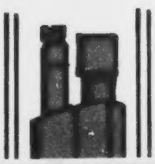
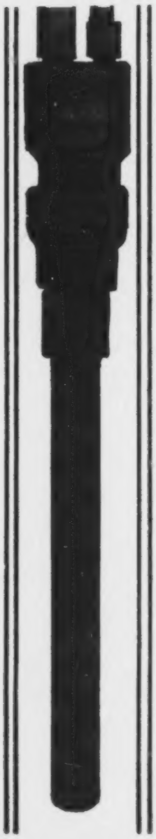


# HEAVY VISCOUS CRUDE

***It won't stir with a stick or pour from a bucket. . . but you can pump it profitably . . . and blend to acceptable pipeline specs downhole!***



The photos show viscous crude in its native state . . . taken from a California well now producing API *4.4* gravity oil.

The oil is being pumped by a new patented completion system that's lifting more than three times the B/D produced by conventional rod equipment previously installed on the well.

Furthermore pump wear is virtually unaffected by sand or other contaminants and blending the crude to acceptable pipeline API Gravity is being made downhole.

If you are a producer or production engineer troubled with pay-out problems lifting viscous oil with your present equipment you'll benefit from closer investigation of a new completion system that is operating so profitably for major California producers today.

For more information write OILWELL DIVISION of United States Steel Corporation, Box 478, Dallas, Texas 75221, ATTN: Ed Metters, Manager — Production Equipment. Ph: (214) 670-1628.

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**Mercury**
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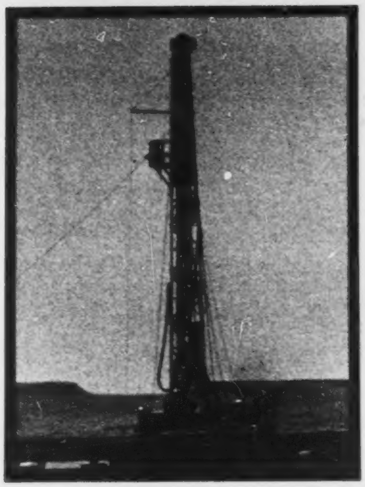

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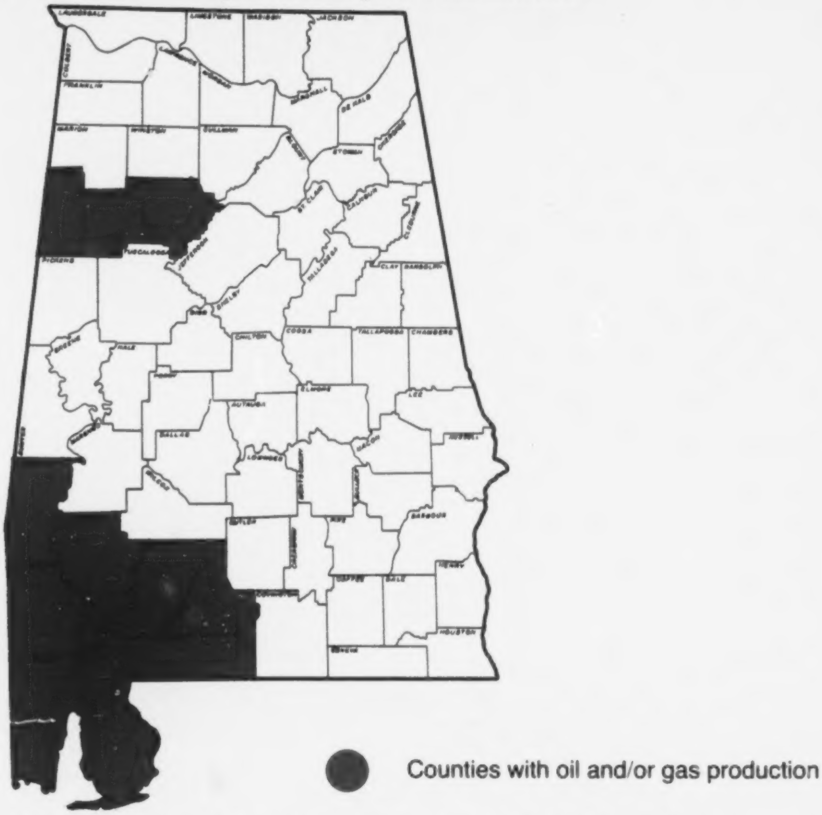
Les joins an organization that has been in the energy financing business for 33 years—United California Bank, parent of UCB Southwest Corp. UCB was the first oil bank on the West Coast, and 33 years later we're the only U.S. bank with affiliated offices in all four world energy capitals—Los Angeles, Houston, Denver and London. And our engineering staff knows how to size up a project, spot problems and opportunities up front, because our people are solidly experienced in all phases of energy industry operation, including project management.

You know our reputation for working with the local Houston financial community—and Les Simpson is committed to reinforcing it in every way. So he's your man in Houston the minute you have a deal or a project that's ready for action.

# The Oil Producing Industry in ALABAMA



## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 67 |
| 2. | Number of Counties with oil and/or gas production | | | 11 |
| 3. | Total land area of State (acres) | | | 32,453,120 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 142,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 5,370,000 |
| 6. | Percent of total land area productive or leased | | | 17.0% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 1,156,610,627 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 10.30 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 196,450,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 6,545,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 90,535,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 293,530,000 |
| 13. | Percent petroleum value to total all minerals | | | 23.1% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st | Coal | | |
| | 2nd | Crude Petroleum | | |
| | 3rd | Cement | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 1,411 |
| 16. | First year of production of crude oil | | | 1944 |
| | natural gas | | | 1904 |
| 17. | First recorded production of crude oil (barrels) | 1944 | | 43,000 |
| | natural gas (Mcf) | 1953 | | 5,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 15,502,188 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .......... 1978
20. Crude oil produced in year of largest production (barrels) .......... 19,072,000
21. Percent of crude oil produced by stripper wells .......... 0.8%
22. Number of producing wells at end of 1978:

| | |
|---|---|
| Crude Oil | 630 |
| Gas & Condensate | 170 |
| Total | 800 |

23. Average daily production of crude oil per well at end of 1978 .......... 79.4
24. Percent of wells pumping or on artificial lift .......... 91.3%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 36,923 | 40,180 | 50,005 | 52,252 |
| Natural Gas Liquids | 1,370* | 1,318* | 1,180* | 3,011 |
| Total Petroleum Liquids | 38,293 | 41,498 | 51,815 | 55,263 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 121 | −863‡ | −742‡ | 61,607 |
| Estimated Production | 11,188 | 10,514 | 21,702 | 55,926 |
| Net Change in Reserves | −11,067 | −11,377 | −22,444 | 5,681 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 231,648 | 239,926 | 471,574 | 950,305 |
| Total Production | 198,541 | 35,861 | 234,402 | 199,086 |
| Proved Reserves Dec. 31, 1978 | 33,107 | 204,065 | 237,172 | 751,219 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .......... *Dry Hole* 20,434
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas* 18,616
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 2 | 3.2 | 16 | 15.1 | 18 | 10.7 |
| Gas Wells | 8 | 12.7 | 50 | 47.2 | 58 | 34.3 |
| Dry Wells | 53 | 84.1 | 39 | 36.8 | 92 | 54.4 |
| Service Wells | 0 | 0 | 1 | 0.9 | 1 | 0.6 |
| Total Wells | 63 | 100.0 | 106 | 100.0 | 169 | 100.0 |
| Avg. Depth per Well | 7,951 | | 6,673 | | 7,151 | |
| Total Footage | 500,940 | | 707,592 | | 1,208,532 | |

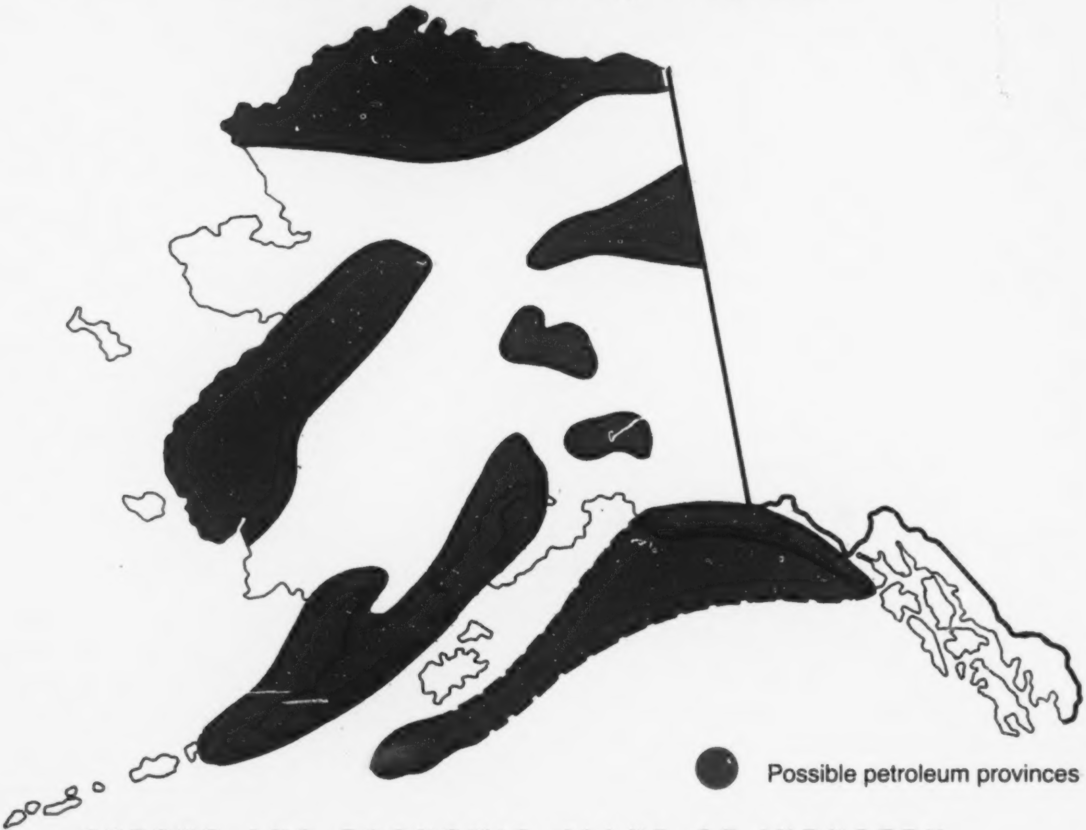
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 732 | 28.5 | 257 | 10.0 | 1,577 | 61.5 | 2,566 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .......... 13

*Estimated
‡Downward Revision of Previous Estimate.

# The Oil Producing Industry in ALASKA



## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | Not Applicable |
| 2. | Number of Counties with oil and/or gas production | | | Not Applicable |
| 3. | Total land area of State (acres) | | | 362,516,480 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 320,490 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 4,810,410 |
| 6. | Percent of total land area productive or leased | | | 1.4% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 6,484,677,684 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 6.75 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 3,022,740,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 5,625,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 91,390,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 3,119,755,000 |
| 13. | Percent petroleum value to total all minerals | | | 86.7% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st | Crude Petroleum | | |
| | 2nd | Sand and Gravel | | |
| | 3rd | Natural Gas | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 5,200 |
| 16. | First year of production of crude oil | | | 1905 |
| | natural gas | | | 1945 |
| 17. | First recorded production of crude oil (barrels) | 1921 | | 10 |
| | natural gas (Mcf) | 1959 | | 135,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 107,721,000 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .......... 1978
20. Crude oil produced in year of largest production (barrels) .......... 447,813,000
21. Percent of crude oil produced by stripper wells .......... Not Applicable
22. Number of producing wells at end of 1978: Crude Oil .......... 366
Gas & Condensate .......... 65
Total .......... 431
23. Average daily production of crude oil per well at end of 1978 .......... 3,357.4
24. Percent of wells pumping or on artificial lift .......... 48.6%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 191,326 | 173,219 | 463,564 | 1,226,885 |
| Natural Gas Liquids | 2,083* | 2,808* | 2,375* | 2,515* |
| Total Petroleum Liquids | 193,409 | 176,027 | 465,939 | 1,229,400 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 78,786 | 0 | 78,786 | −6,311‡ |
| Estimated Production | 447,541 | 814 | 448,355 | 214,010 |
| Net Change in Reserves | −368,755 | −814 | −369,569 | 207,699 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 10,610,392 | 414,591 | 11,024,983 | 33,302,735 |
| Total Production | 1,363,036 | 6,800 | 1,369,836 | 1,690,440 |
| Proved Reserves Dec. 31, 1978 | 9,247,356 | 407,791 | 9,655,147 | 31,612,295 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .......... *Dry Hole* 17,921
29. Deepest producing well drilled to January 1, 1979 (feet) ....... Oil 14,996
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 2 | 20.0 | 50 | 76.9 | 52 | 69.4 |
| Gas Wells | 1 | 10.0 | 3 | 4.6 | 4 | 5.3 |
| Dry Wells | 7 | 70.0 | 3 | 4.6 | 10 | 13.3 |
| Service Wells | 0 | 0 | 9 | 13.9 | 9 | 12.0 |
| Total Wells | 10 | 100.0 | 65 | 100.0 | 75 | 100.0 |
| Avg. Depth per Well | 9,134 | | 8,836 | | 8,876 | |
| Total Footage | 91,338 | | 574,367 | | 665,705 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 605 | 55.0 | 93 | 8.5 | 401 | 36.5 | 1,099 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .......... 16

---

*Estimated
‡Downward Revision of Previous Estimate.

# update!

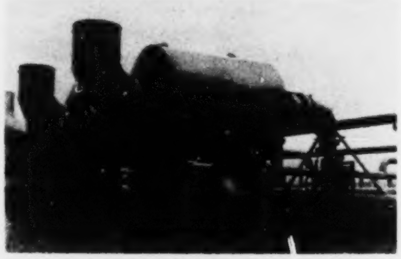
## Axelson Safety Valves On North Sea Gas Terminal

LONDON, England — Axelson has supplied twelve type "GF" safety valves to a unique installation at an onshore gas terminal in St. Fergus, Scotland.

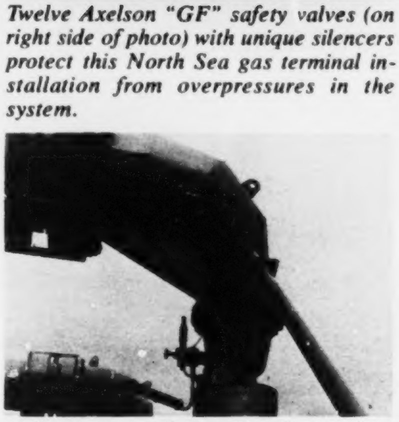
These 8"-600# RF inlet valves with vertical discharge are relieving into enormous silencers which have been attached to 18" — 150# RF flanges specially adapted to the outlet of the valves. The controls of these valves are set to relieve at 992 psi and have a fixed blowdown of 5-7%. Body material is ASTM 352 trimmed in 303 stainless steel while the soft seat is made of Hydrin and the seals are of Fluorosilicone. The valves have a total capacity of more than 3.20 billion CF/D and are installed on a 32" pipeline flowing 3.18 billion CF/D.

The silencers are required because the terminal is located in a residential and industrial area. The silencers stand about 20' high and are approximately 10' in diameter by 15' long.

The Frigg Field is being produced from two offshore platforms of 24 wells each. Each well is equipped with Axelson type "MHA" hydraulic gate valve actuators to provide a fail-safe wellhead shut-in system for the two platforms. (Ken Robison)



*Twelve Axelson "GF" safety valves (on right side of photo) with unique silencers protect this North Sea gas terminal installation from overpressures in the system.*



*A better view of one of twelve Axelson "GF" safety valves protecting the St. Fergus gas terminal.*

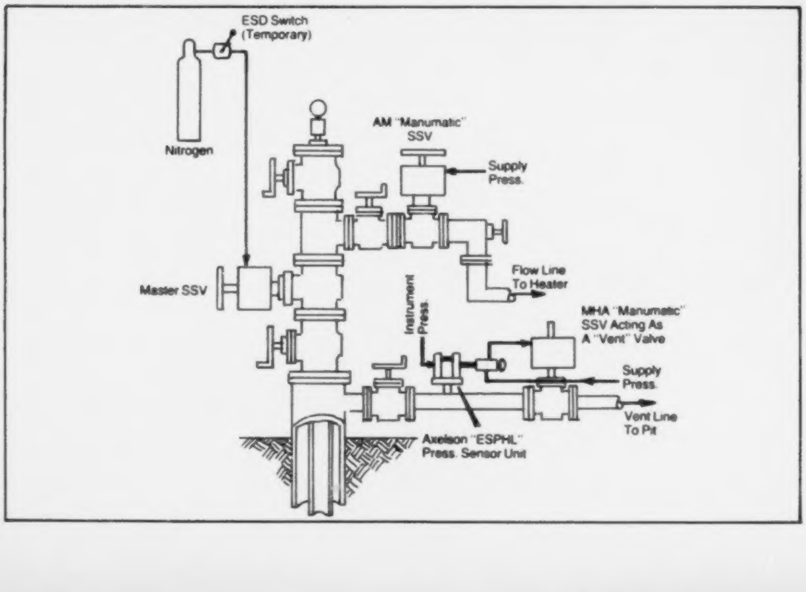
## Axelson SSV Used As "Vent" Valve

McCOOK, TEXAS — Unusual application of an Axelson "Manumatic" type MHA actuator has it acting as a "vent" on "relief" valve on the casing of a gas producing well.

This was accomplished by placing the Axelson Hi-Lo "ESPHL" pressure sensor unit upstream of the SSV and reversing the instrument pressure line connections. The sensors are set to open the SSV on a high of 2,000 psi and close it on a low of 1700 psi. The vent line flows to a discharge pit away from the wellhead.

The wellhead is equipped with conventional SSV using a "Manumatic" type AM actuator hooked to an Axelson "ESP" high pressure sensor upstream of the heater and a Hi-Lo type "ESPHL" sensor unit on the separator.

The well is 19,000 feet deep and has a small amount of $H_2S$. A manual ESD system is installed to operate the master SSV (see schematic). The ESD will be disconnected later and the master SSV will be tied in with the SSV safety system. (Randy Hale)



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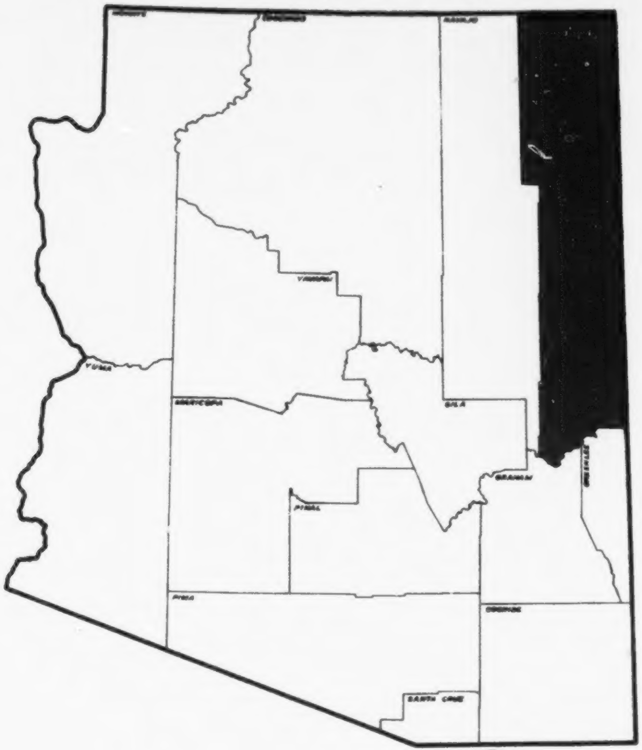
# The Oil Producing Industry in ARIZONA



● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 14 |
| 2. | Number of Counties with oil and/or gas production | | | 1 |
| 3. | Total land area of State (acres) | | | 72,586,880 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 4,900 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 10,970,000 |
| 6. | Percent of total land area productive or leased | | | 15.1% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 51,355,281 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 5.85 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 2,440,000 |
| 10. | Value of natural gas liquids produced in 1978 | | | Not Applicable |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 100,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 2,540,000 |
| 13. | Percent petroleum value to total all minerals | | | 0.1% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ........ Copper | | | |
| | 2nd ........ Molybdenum | | | |
| | 3rd ........ Coal | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 62 |
| 16. | First year of production of crude oil | | | 1954 |
| | natural gas | | | 1955 |
| 17. | First recorded production of crude oil (barrels) | 1958 | | 12,000 |
| | natural gas (Mcf) | 1958 | | 36,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 0 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................... 1968
20. Crude oil produced in year of largest production (barrels) .................... 3,370,000
21. Percent of crude oil produced by stripper wells ............................ 1.6%
22. Number of producing wells at end of 1978: Crude Oil ....................... 31
Gas & Condensate ................ 0
Total ......................... 31
23. Average daily production of crude oil per well at end of 1978 .................. 35.5
24. Percent of wells pumping or on artificial lift ................................ 100.0%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 1,740 | 1,418 | 1,170 | 1,143 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 2,858 | 0 | 2,858 | 0 |
| Estimated Production | 626 | 0 | 626 | 0 |
| Net Change in Reserves | 2,232 | 0 | 2,232 | 0 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 24,586 | 0 | 24,586 | 59,723 |
| Total Production | 17,034 | 0 | 17,034 | 17,185 |
| Proved Reserves Dec. 31, 1978 | 7,552 | 0 | 7,552 | 42,538 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ................. *Dry Hole* 12,556
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Oil* 6,793
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 0 | 0 | 2 | 66.7 | 2 | 28.6 |
| Gas Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Dry Wells | 4 | 100.0 | 1 | 33.3 | 5 | 71.4 |
| Service Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Wells | 4 | 100.0 | 3 | 100.0 | 7 | 100.0 |
| Avg. Depth per Well | 3,383 | | 4,859 | | 4,016 | |
| Total Footage | 13,533 | | 14,576 | | 28,109 | |

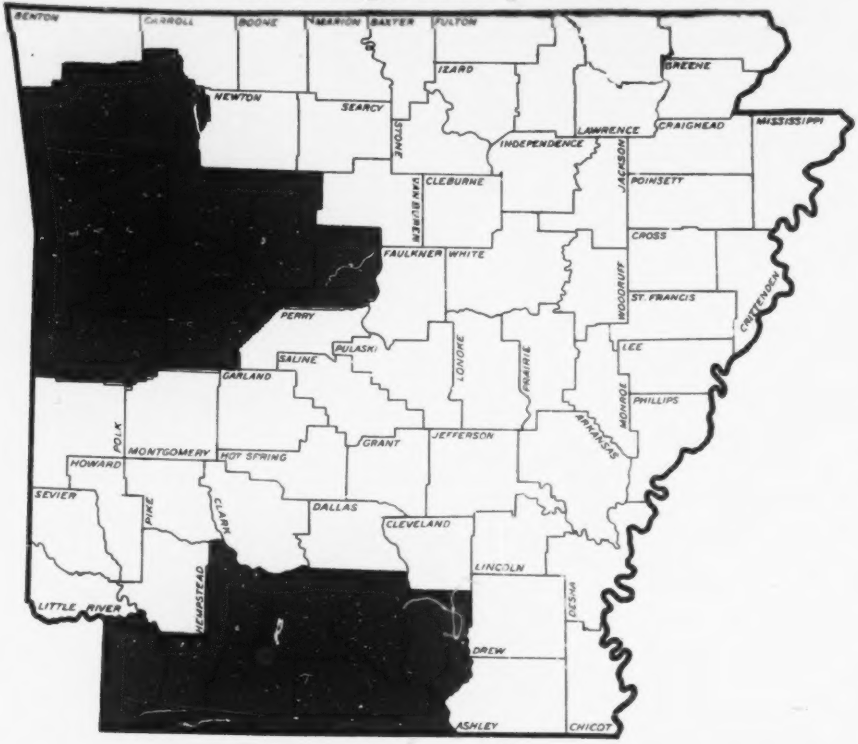
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 40 | 9.3 | 34 | 7.9 | 355 | 82.8 | 429 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................ >1

> Less Than.

# The Oil Producing Industry in ARKANSAS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MARION
BAXTER
FULTON
IZARD
GREENE
NEWTON
SEARCY
STONE
LAWRENCE
CRAIGHEAD
MISSISSIPPI
INDEPENDENCE
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FAULKNER
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PERRY
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PHILLIPS
POLK
MONTGOMERY
HOT SPRING
GRANT
JEFFERSON
ARKANSAS
HOWARD
SEVIER
PIKE
CLARK
DALLAS
CLEVELAND
LINCOLN
DESHA
HEMPSTEAD
LITTLE RIVER
DREW
ASHLEY
CHICOT

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 75 |
| 2. | Number of Counties with oil and/or gas production | | | 19 |
| 3. | Total land area of State (acres) | | | 33,244,800 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 917,300 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 7,000,000 |
| 6. | Percent of total land area productive or leased | | | 23.8% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 3,332,968,760 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 10.50 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 213,410,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 4,700,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 69,415,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 287,525,000 |
| 13. | Percent petroleum value to total all minerals | | | 46.4% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Crude Petroleum | | | |
| | 2nd ... Bromine | | | |
| | 3rd ... Natural Gas | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 2,533 |
| 16. | First year of production of crude oil | | | 1921 |
| | natural gas | | | 1889 |
| 17. | First recorded production of crude oil (barrels) | 1921 | | 10,473,000 |
| | natural gas (Mcf) | 1906 | | 21 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 9,572,870 |

## PRODUCTION AND RESERVES

| | | | |
|---|---|---|---|
| 19. | Year of largest production (crude oil) | | 1925 |
| 20. | Crude oil produced in year of largest production (barrels) | | 77,398,000 |
| 21. | Percent of crude oil produced by stripper wells | | 30.5% |
| 22. | Number of producing wells at end of 1978: | Crude Oil | 7,553 |
| | | Gas & Condensate | 1,143 |
| | | Total | 8,696 |
| 23. | Average daily production of crude oil per well at end of 1978 | | 7.5 |
| 24. | Percent of wells pumping or on artificial lift | | 97.4% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 44,200 | 49,445 | 55,348 | 55,685 |
| Natural Gas Liquids | 1,652 | 1,669 | 1,520 | 1,564 |
| Total Petroleum Liquids | 45,852 | 51,114 | 56,868 | 57,249 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 27,346 | 3,647 | 30,993 | 52,475 |
| Estimated Production | 19,419 | 1,264 | 20,683 | 105,747 |
| Net Change in Reserves | 7,927 | 2,383 | 10,310 | −53,272 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 1,562,014 | 78,872 | 1,640,886 | 5,020,487 |
| Total Production | 1,467,976 | 73,511 | 1,541,487 | 3,393,423 |
| Proved Reserves Dec. 31, 1978 | 94,038 | 5,361 | 99,399 | 1,627,064 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 16,611 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Gas/Condensate* | 11,195 |

30. Wells and footage drilled in 1978:

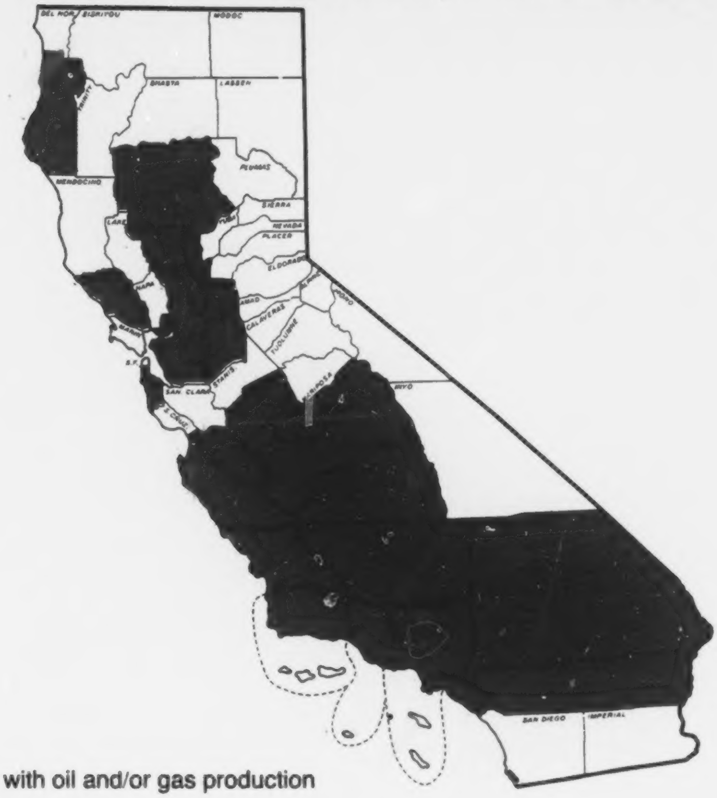
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 9 | 9.5 | 181 | 51.0 | 190 | 42.2 |
| Gas Wells | 2 | 2.1 | 65 | 18.3 | 67 | 14.9 |
| Dry Wells | 84 | 88.4 | 101 | 28.5 | 185 | 41.1 |
| Service Wells | 0 | 0 | 8 | 2.2 | 8 | 1.8 |
| Total Wells | 95 | 100.0 | 355 | 100.0 | 450 | 100.0 |
| Avg. Depth per Well | 6,131 | | 4,621 | | 4,939 | |
| Total Footage | 582,460 | | 1,640,303 | | 2,222,763 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 15,543 | 56.0 | 2,058 | 7.4 | 10,145 | 36.6 | 27,746 | 100.0 |

| | | |
|---|---|---|
| 32. | Rotary Drilling Rigs Active in 1978 (average) | 14 |

# The Oil Producing Industry in CALIFORNIA


DEL NOR
SISKIYOU
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SHASTA
LASSEN
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SIERRA
NEVADA
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NAPA
AMADOR
CALAVERAS
TUOLUMNE
S.F.
SAN CLARA
STANIS
S. CRUZ
MARIPOSA
INYO
MONO
SAN DIEGO
IMPERIAL

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 58 |
| 2. | Number of Counties with oil and/or gas production | | | 29 |
| 3. | Total land area of State (acres) | | | 100,071,040 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 596,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 2,957,900 |
| 6. | Percent of total land area productive or leased | | | 3.6% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 40,045,476,365 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 8.00 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 2,778,425,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 67,665,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 404,267,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 3,250,357,000 |
| 13. | Percent petroleum value to total all minerals | | | 69.2% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Crude Petroleum | | | |
| | 2nd ... Cement | | | |
| | 3rd ... Natural Gas | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 27,314 |
| 16. | First year of production of crude oil | | | 1861 |
| | natural gas | | | 1889 |
| 17. | First recorded production of crude oil (barrels) | 1876 | | 12,000 |
| | natural gas (Mcf) | 1906 | | 153,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 8,337,625 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................... 1968

20. Crude oil produced in year of largest production (barrels) .................... 375,496,000

21. Percent of crude oil produced by stripper wells .............................. 14.7%

22. Number of producing wells at end of 1978:

| | | |
|---|---|---|
| Crude Oil | ........................ | 44,999 |
| Gas & Condensate | ................ | 854 |
| Total | ........................ | 45,853 |

23. Average daily production of crude oil per well at end of 1978 .................. 21.1

24. Percent of wells pumping or on artificial lift .................................. 98.9%

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 882,737 | 890,768 | 957,833 | 951,515 |
| Natural Gas Liquids | 25,556 | 23,981 | 22,215* | 21,663* |
| Total Petroleum Liquids | 908,293 | 914,749 | 980,048 | 973,178 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 186,552 | 14,832 | 201,384 | 201,724 |
| Estimated Production | 347,102 | 8,870 | 355,972 | 304,990 |
| Net Change in Reserves | – 160,550 | 5,962 | – 154,588 | – 103,266 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 21,552,498 | 1,229,714 | 22,782,212 | 33,279,946 |
| Total Production | 18,081,197 | 1,127,393 | 19,208,590 | 28,184,864 |
| Proved Reserves Dec. 31, 1978 | 3,471,301 | 102,321 | 3,573,622 | 5,095,082 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .................. *Dry Hole* 22,711

29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Oil* 18,060

30. Wells and footage drilled in 1978:

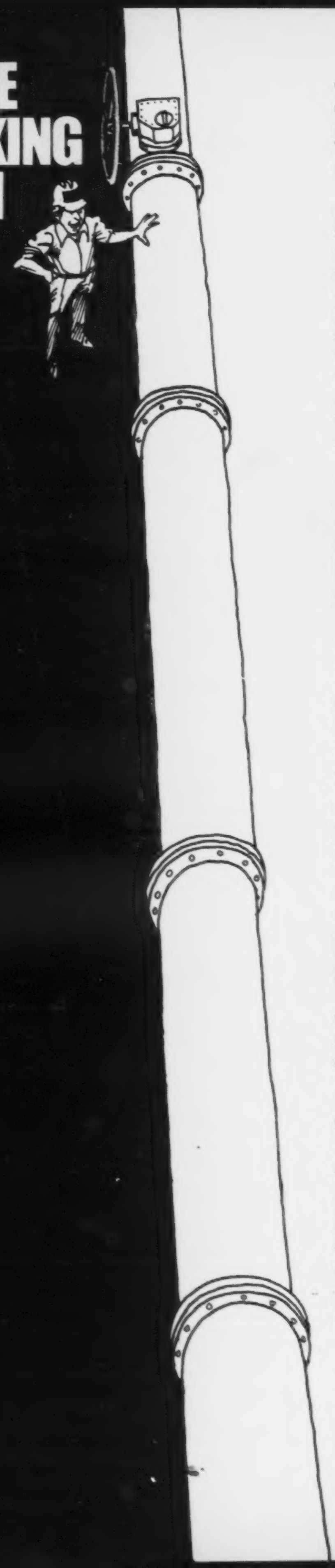
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 78 | 21.1 | 1,536 | 72.9 | 1,614 | 65.2 |
| Gas Wells | 41 | 11.1 | 27 | 1.3 | 68 | 2.8 |
| Dry Wells | 251 | 67.8 | 71 | 3.4 | 322 | 13.0 |
| Service Wells | 0 | 0 | 471 | 22.4 | 471 | 19.0 |
| Total Wells | 370 | 100.0 | 2,105 | 100.0 | 2,475 | 100.0 |
| Avg. Depth per Well | 6,175 | | 2,089 | | 2,700 | |
| Total Footage | 2,284,671 | | 4,398,349 | | 6,683,020 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 90,123 | 77.1 | 2,611 | 2.2 | 24,139 | 20.7 | 116,873 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .............................. 94

# WE'RE COOKING WITH GAS.



We're Tretolite. And we're winning the war against internal corrosion all up and down the pipe—in south Arkansas and Texas; in Mississippi, offshore Louisiana; and on and on.

Natural gas pipeline people like the way we roll up our sleeves and go to work when they give us the nod. They like our know-how, our experience. Our research and development, and our products. Our situation-study and analysis capabilities. Our cost-effective recommendations and monitoring programs. Our complete line of specialized chemical formulas for every situation.

Take a look at how well we work.

## BETTERING A PREVIOUS PROGRAM BY BETTER THAN 9 TO 1.

In south Arkansas, for example, we went to work on a natural gas gathering line with our KONTOL* KG-8 Gas Pipeline Corrosion Inhibitor. With the old inhibitor program, this line, which transports 4 MMCFD of wet 4% $H_2S$-6% $CO_2$-trace oxygen natural gas, had a corrosion rate of 9.4 MPY (by weight-loss coupons). With the change to KG-8 at a continuous injection rate of one quart per 1 MMCF, the corrosion rate was cut to less than 1 MPY.

## NO LEAKS IN SOUTH TEXAS.

In July of 1977, we started treating a 2% $H_2S$-6% $CO_2$ natural gas gathering line in south Texas carrying 15 MMCFD. We used our KONTOL KG-6 Three-Phase Gas Pipeline Corrosion Inhibitor at a continuous injection rate of one quart per 1 MMCF, and there has not been a leak since. Corrosion rate less than 1 MPY, with iron counts ranging from 1 to 4 ppm, is now typical of this system.

## LEAKS PREVENTED IN MISSISSIPPI.

Suspected internal corrosion in a sour dehydrated gas pipeline was a serious concern for a transmission company in Mississippi when Tretolite was called in. We recommended KONTOL KG-2—an inhibitor specially formulated to remain flowable in dehydrated gas—at one-half pint per 1 MMCF. For the two years since, there has not been a single leak in this system.

## OFFSHORE LOUISIANA CORROSION MINIMIZED.

Continuing leaks due to internal corrosion plagued a gathering line located about 60 miles offshore Louisiana transporting wet, 5% $CO_2$ natural gas. After an extensive on-stream inhibitor evaluation program using a flush-mounted, polarization-type probe, we initiated continuous injection of one pint KONTOL KG-8 per 1 MMCF. That was two years ago. Corrosion rate has since been held to less than 1 MPY.

## KNOWN AROUND THE WORLD.

Tretolite is a world leader in specialized treatment and process chemicals for the petroleum industry—with over 63 years of experience. You couldn't ask for a better source. Ask us to get cooking for you now.

KP-79-1

*Registered Trademark, Petrolite Corporation

PETROLITE

TRETOLITE

**Division**
369 Marshall Avenue,
St. Louis, Missouri 63119
(314) 961-3500

2225 East Randol Mill Road,
Arlington, Texas 76011
(817) 261-1273

**Offices and representatives:** Throughout the United States, Al-Khobar, Bilthoven, Buenos Aires, Cairo, Calgary, Caracas, Dubai, Hamburg, Kuwait, London, Madrid, Maracaibo, Mexico City, Paris, Rome, Singapore, Sydney, Tokyo

# TRETOLITE TAMES THE TOUGHEST INTERNAL CORROSION PROBLEMS.

# Every capital dollar you tie up in expensive equipment is a dollar less you can invest in drilling.

Tieing up your after tax capital dollars in expensive production, compression and gas processing equipment, particularly during the first one to three years, is a quick way to tie up your drilling operation. After all, that's capital you could use for what you do best—finding gas and oil. Keep those dollars fluid after the initial completion of your well by renting your equipment from Halliburton Resource Management.

The equipment rented from HRM generates revenues for your company instead of tieing them up. And it goes on your books as a pre-tax expense item. That alone can make your profitability statement look a lot better.

**Change your equipment to meet changing production loads.**

Usually, during those first one to three years after initial completion of your well, turnover in field equipment is greatest. If you buy, you're committed to high operating expenses for the production life of your well. It's much more cost efficient to rent your equipment during this period than to purchase and have to sell later. With HRM's capital equipment rental service, equipment can be quickly and easily changed as operating conditions change. Once production has stabilized, we'll be better able to more accurately estimate what equipment you'll need over the long haul.

**Your tax saving rental options.**

HRM rents production, conditioning and treating equipment to help keep your capital flowing back into drilling operations during those critical early years.

Compression equipment rentals are available for the same capital and pre-tax benefits... or, a rental-purchase plan is available when this option provides better economics.

**Get the right equipment for your application.**

HRM's professional application design services will help size the right equipment to your application. This service has saved our customers quite a lot of money over capital equipment ownership costs.

**If we rent it, we service it.**

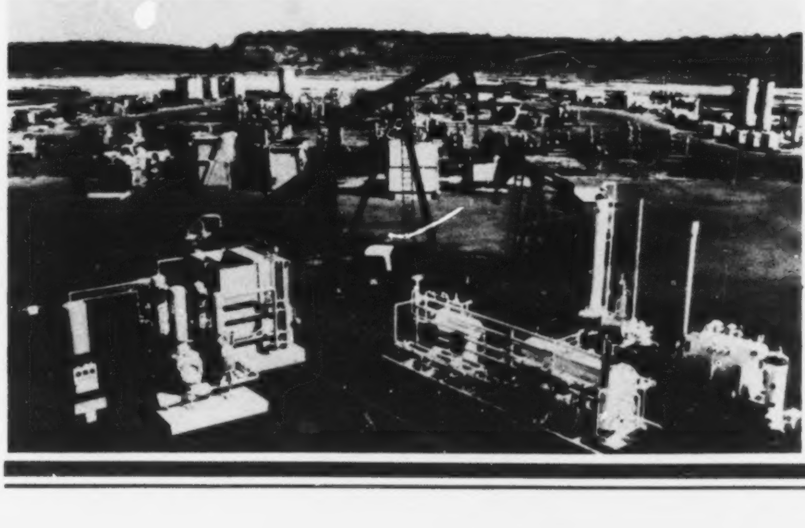
Our staff of trained, experienced service personnel is on constant call. In fact, their fully equipped trucks are radio dispatched to be on the spot in a hurry. They perform routine, preventive maintenance. And in an emergency situation, if they can't fix the problem from the field, we'll swap out the equipment to keep you on stream.

**Who we are and how we deliver.**

We're a division of Halliburton Company. And we keep sizeable equipment inventories so we can meet almost any need almost immediately.

**Here's what you do.**

Contact us at the address listed below. We'll show you with facts and figures, how HRM's capital equipment rental service can untie your capital to drill more wells... and improve the profits from the wells you already have.

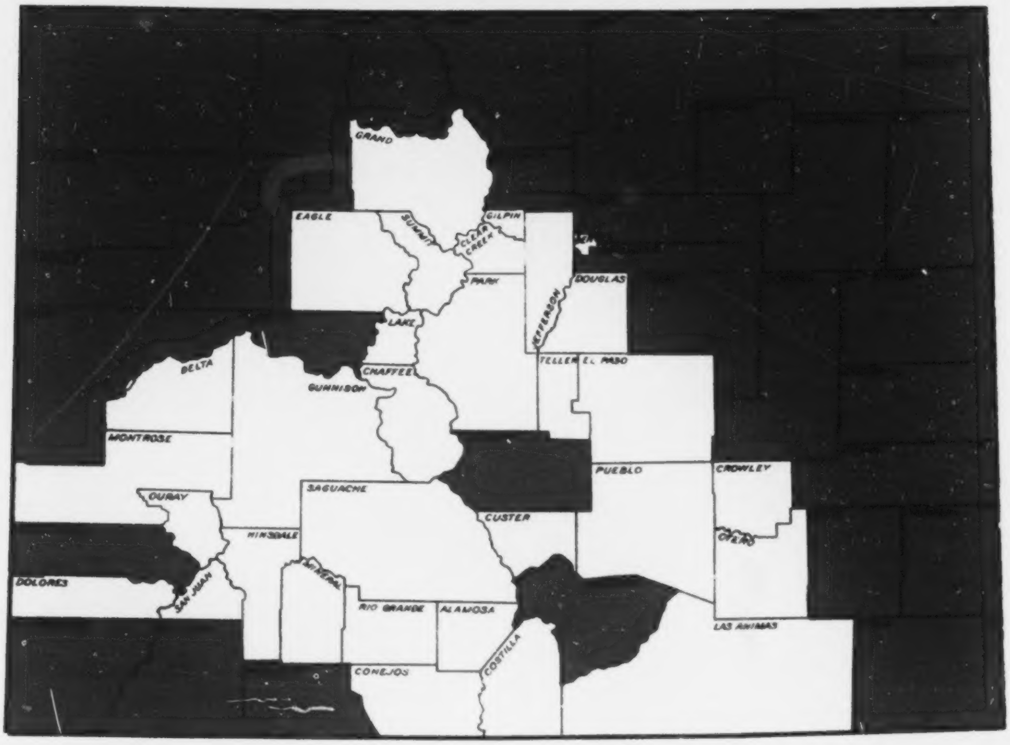


**We help you conserve capital for what you do best.**

**HRM**

**Halliburton Resource Management**
A **Halliburton** Company
1400 Fidelity Union Tower
P.O. Box 1411, Dallas, Texas 75221
Phone (214) 748-7291

# The Oil Producing Industry in COLORADO


GRAND
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SUMMIT
GILPIN
CLEAR CREEK
PARK
DOUGLAS
JEFFERSON
LAKE
DELTA
CHAFFEE
GUNNISON
TELLER
EL PASO
MONTROSE
PUEBLO
CROWLEY
SAGUACHE
OURAY
CUSTER
HINSDALE
OTERO
DOLORES
SAN JUAN
MINERAL
RIO GRANDE
ALAMOSA
LAS ANIMAS
COSTILLA
CONEJOS

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 63 |
| 2. | Number of Counties with oil and/or gas production | | | 32 |
| 3. | Total land area of State (acres) | | | 66,410,240 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 860,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 34,340,000 |
| 6. | Percent of total land area productive or leased | | | 53.0% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 4,651,609,637 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 10.65 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 391,410,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 68,850,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 165,323,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 625,583,000 |
| 13. | Percent petroleum value to total all minerals | | | 44.2% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st | Crude Petroleum | | |
| | 2nd | Molybdenum | | |
| | 3rd | Coal | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 12,400 |
| 16. | First year of production of crude oil | | | 1862 |
| | natural gas | | | 1893 |
| 17. | First recorded production of crude oil (barrels) | 1862 | | 50 |
| | natural gas (Mcf) | 1906 | | 23 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 6,375,914 |

# In energy banking as in energy development, you need to know your Source.

Check the performance record of First of Denver's energy bankers and you'll find

*Commitment* to consistent financial support to help develop the Rocky Mountain West and its energy resource industries.

*Knowledge* of the region's potential and the unique business and financial requirements of its energy companies.

*Services* and specialized banking skills directed to anticipating and fulfilling those requirements.

For bankers whose performance reflects an understanding of the economic significance of successful energy industry growth, consider the Source.

**think First.**

**First of Denver**

The First National Bank of Denver, Energy Banking Group, P.O. Box 5808 T.A. Denver, Colorado 80217
(303) 893-2211, Member First National Bancorporation

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Over 70 U.S. stores are located where the action is. That means we can get to you in a hurry or you can get to us. Either way our experienced people know what it takes to keep you operating. That's because they know what you need in NATIONAL® and other popular-make products.

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ARMCO National Supply Company

## PRODUCTION AND RESERVES

| | | | |
|---|---|---|---|
| 19. | Year of largest production (crude oil) | | 1956 |
| 20. | Crude oil produced in year of largest production (barrels) | | 58,156,000 |
| 21. | Percent of crude oil produced by stripper wells | | 5.1% |
| 22. | Number of producing wells at end of 1978: Crude Oil | 3,227 | |
| | Gas & Condensate | 2,169 | |
| | Total | 5,396 | |
| 23. | Average daily production of crude oil per well at end of 1978 | | 31.5 |
| 24. | Percent of wells pumping or on artificial lift | | 93.0% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 104,353 | 106,536 | 108,110 | 100,690 |
| Natural Gas Liquids | 17,981 | 22,976 | 25,701 | 24,477 |
| Total Petroleum Liquids | 122,334 | 129,512 | 133,811 | 125,167 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | −7,618‡ | 1,677 | −5,941‡ | 125,390 |
| Estimated Production | 36,280 | 8,936 | 45,216 | 185,612 |
| Net Change in Reserves | −43,898 | −7,259 | −51,157 | −60,222 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 1,425,651 | 156,880 | 1,582,531 | 5,143,870 |
| Total Production | 1,227,639 | 95,681 | 1,323,320 | 3,178,105 |
| Proved Reserves Dec. 31, 1978 | 198,012 | 61,199 | 259,211 | 1,965,765 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 19,710 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | Gas | 17,632 |

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 24 | 5.2 | 296 | 38.9 | 320 | 26.1 |
| Gas Wells | 50 | 10.8 | 278 | 36.5 | 328 | 26.8 |
| Dry Wells | 389 | 84.0 | 159 | 20.9 | 548 | 44.8 |
| Service Wells | 0 | 0 | 28 | 3.7 | 28 | 2.3 |
| Total Wells | 463 | 100.0 | 761 | 100.0 | 1,224 | 100.0 |
| Avg. Depth per Well | 5,033 | | 5,032 | | 5,032 | |
| Total Footage | 2,330,493 | | 3,829,040 | | 6,159,533 | |

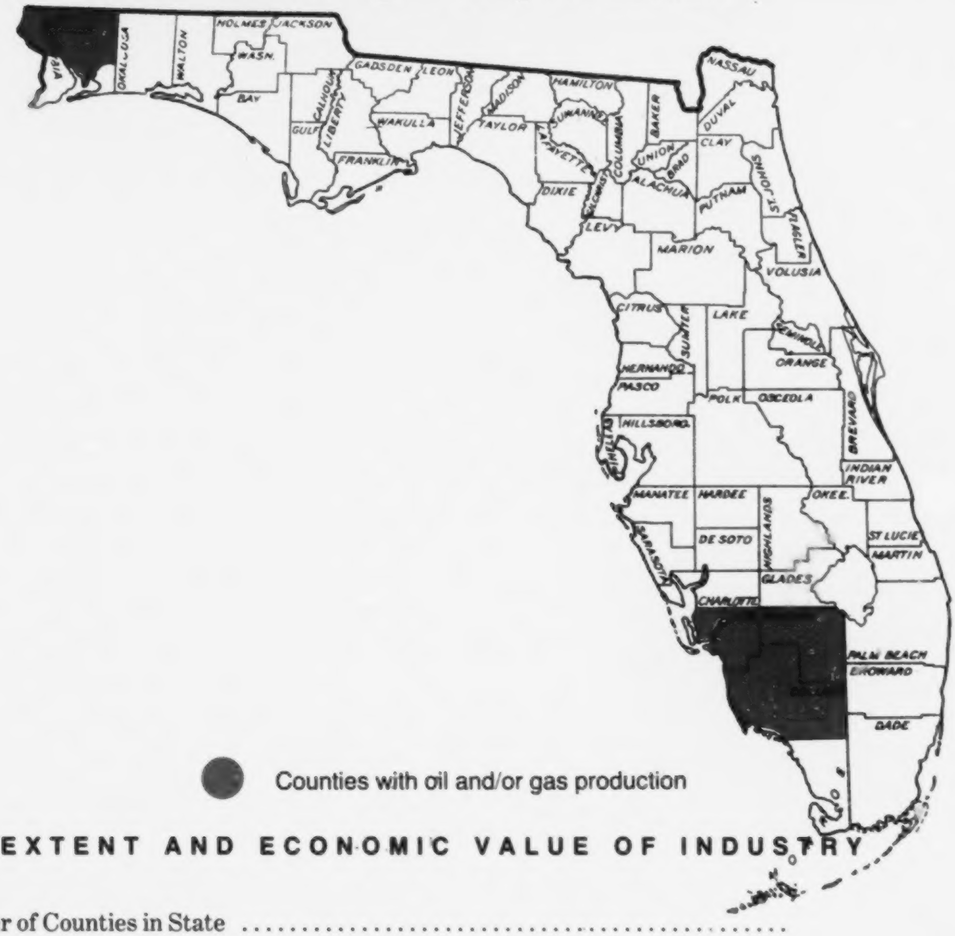
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 7,238 | 27.4 | 3,224 | 12.2 | 15,936 | 60.4 | 26,398 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .......... 41

‡Downward Revision of Previous Estimate.

# The Oil Producing Industry in FLORIDA


HOLMES
JACKSON
OKALOOSA
WALTON
WASH.
BAY
CALHOUN
LIBERTY
GULF
GADSDEN
LEON
WAKULLA
FRANKLIN
JEFFERSON
MADISON
TAYLOR
HAMILTON
SUWANNEE
LAFAYETTE
DIXIE
COLUMBIA
GILCHRIST
BAKER
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DUVAL
UNION
BRAD
CLAY
ALACHUA
PUTNAM
ST. JOHNS
FLAGLER
LEVY
MARION
VOLUSIA
CITRUS
SUMTER
LAKE
SEMINOLE
ORANGE
HERNANDO
PASCO
POLK
OSCEOLA
BREVARD
HILLSBORO
PINELLAS
INDIAN RIVER
MANATEE
HARDEE
OKEE.
HIGHLANDS
DE SOTO
ST LUCIE
MARTIN
SARASOTA
GLADES
CHARLOTTE
PALM BEACH
BROWARD
DADE

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 67 |
| 2. | Number of Counties with oil and/or gas production | | | 5 |
| 3. | Total land area of State (acres) | | | 34,617,600 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 34,200 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 2,813,300 |
| 6. | Percent of total land area productive or leased | | | 8.2% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 2,720,184,500 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 12.20 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 579,940,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 67,715,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 61,398,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 709,053,000 |
| 13. | Percent petroleum value to total all minerals | | | 38.7% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ........ Phosphate Rock | | | |
| | 2nd ........ Crude Petroleum | | | |
| | 3rd ........ Stone | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 540 |
| 16. | First year of production of crude oil | | | 1943 |
| | natural gas | | | 1943 |
| 17. | First recorded production of crude oil (barrels) | 1943 | | 4,000 |
| | natural gas (Mcf) | 1949 | | 10,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 47,187,305 |

## PRODUCTION AND RESERVES

| | | | |
|---|---|---|---|
| 19. | Year of largest production (crude oil) | | 1978 |
| 20. | Crude oil produced in year of largest production (barrels) | | 47,536,000 |
| 21. | Percent of crude oil produced by stripper wells | | Not Applicable |
| 22. | Number of producing wells at end of 1978: | Crude Oil | 115 |
| | | Gas & Condensate | 2* |
| | | Total | 117 |
| 23. | Average daily production of crude oil per well at end of 1978 | | 1,270.0 |
| 24. | Percent of wells pumping or on artificial lift | | 56.5% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 114,732 | 121,475 | 127,784 | 130,235 |
| Natural Gas Liquids | 18,083* | 21,713* | 28,750* | 22,438* |
| Total Petroleum Liquids | 132,815 | 143,188 | 156,534 | 152,673 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 7,874 | 8,383 | 16,257 | −4,040‡ |
| Estimated Production | 47,262 | 7,114 | 54,376 | 50,987 |
| Net Change in Reserves | −39,388 | 1,269 | −38,119 | −55,027 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 453,622 | 47,948 | 501,570 | 435,224 |
| Total Production | 284,261 | 26,458 | 310,719 | 274,928 |
| Proved Reserves Dec. 31, 1978 | 169,361 | 21,490 | 190,851 | 160,296 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 18,670 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Oil* | 16,130 |

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 1 | 6.3 | 5 | 38.5 | 6 | 20.7 |
| Gas Wells | 0 | 0 | 2 | 15.4 | 2 | 6.9 |
| Dry Wells | 15 | 93.7 | 6 | 46.1 | 21 | 72.4 |
| Service Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Wells | 16 | 100.0 | 13 | 100.0 | 29 | 100.0 |
| Avg. Depth per Well | 13,079 | | 12,741 | | 12,928 | |
| Total Footage | 209,271 | | 165,638 | | 374,909 | |

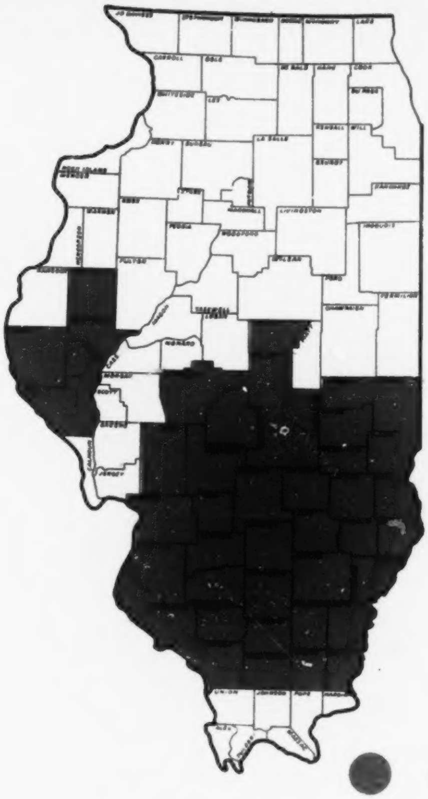
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 209 | 26.2 | 2 | 0.3 | 586 | 73.5 | 797 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .............................. 6

*Estimated.
‡Downward Revision of Previous Estimate.

# The Oil Producing Industry in ILLINOIS



● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 102 |
| 2. | Number of Counties with oil and/or gas production | | | 45 |
| 3. | Total land area of State (acres) | | | 35,678,720 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 651,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 3,000,000 |
| 6. | Percent of total land area productive or leased | | | 10.2% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 7,960,492,994 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 12.90 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 305,860,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 65,810,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 1,313,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 372,983,000 |
| 13. | Percent petroleum value to total all minerals | | | 14.5% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Coal | | | |
| | 2nd ... Crude Petroleum | | | |
| | 3rd ... Stone | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 5,866 |
| 16. | First year of production of crude oil | | | 1889 |
| | natural gas | | | 1882 |
| 17. | First recorded production of crude oil (barrels) | 1890 | | 1,460 |
| | natural gas (Mcf) | 1906 | | 410,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 0 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .......................................... 1940
20. Crude oil produced in year of largest production (barrels) ...................... 147,647,000
21. Percent of crude oil produced by stripper wells ................................. 92.2%
22. Number of producing wells at end of 1978: Crude Oil ........................ 23,869
Gas & Condensate ................. 30
Total ......................... 23,899
23. Average daily production of crude oil per well at end of 1978 .................. 2.8
24. Percent of wells pumping or on artificial lift .................................. 100.0%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 71,416 | 71,781 | 70,159 | 64,959 |
| Natural Gas Liquids | 22,658* | 21,691* | 33,000* | 24,160* |
| Total Petroleum Liquids | 94,074 | 93,472 | 103,159 | 89,119 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 10,588 | 0 | 10,588 | 3,443 |
| Estimated Production | 22,620 | 0 | 22,620 | 789 |
| Net Change in Reserves | −12,032 | 0 | −12,032 | 2,654 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 3,229,137 | 130,199 | 3,359,336 | 1,879,070 |
| Total Production | 3,091,210 | 130,199 | 3,221,409 | 1,458,633 |
| Proved Reserves Dec. 31, 1978 | 137,927 | 0 | 137,927 | 420,437 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ................. *Dry Hole* 14,942
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Oil* 5,373
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 34 | 12.8 | 511 | 56.7 | 545 | 46.7 |
| Gas Wells | 5 | 1.9 | 10 | 1.1 | 15 | 1.3 |
| Dry Wells | 226 | 85.3 | 308 | 34.1 | 534 | 45.8 |
| Service Wells | 0 | 0 | 73 | 8.1 | 73 | 6.2 |
| Total Wells | 265 | 100.0 | 902 | 100.0 | 1,167 | 100.0 |
| Avg. Depth per Well | 2,942 | | 2,554 | | 2,643 | |
| Total Footage | 779,708 | | 2,304,124 | | 3,083,832 | |

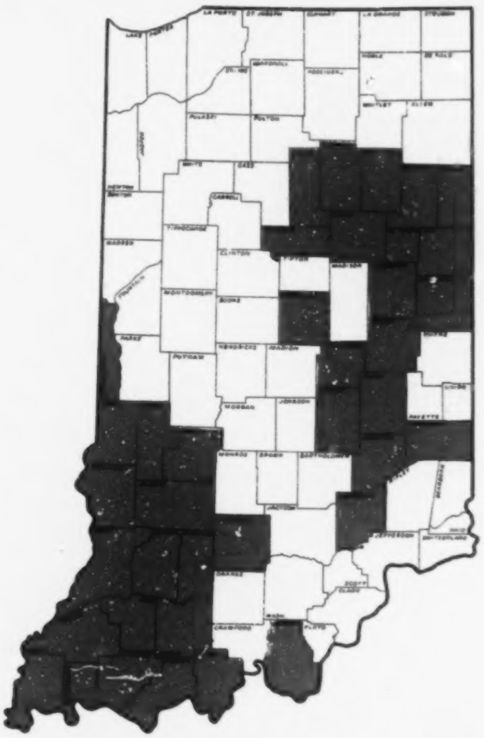
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 67,878 | 61.4 | 1,363 | 1.2 | 41.269 | 37.4 | 110,510 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................ 28

*Estimated.

# The Oil Producing Industry in INDIANA



● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 92 |
| 2. | Number of Counties with oil and/or gas production | | | 38 |
| 3. | Total land area of State (acres) | | | 23,102,080 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 2,819,640 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 750,000 |
| 6. | Percent of total land area productive or leased | | | 15.5% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 1,231,637,958 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 13.00 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 62,050,000 |
| 10. | Value of natural gas liquids produced in 1978 | | | Not Applicable |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 130,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 62,180,000 |
| 13. | Percent petroleum value to total all minerals | | | 9.5% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Coal | | | |
| | 2nd ... Cement | | | |
| | 3rd ... Stone | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 600 |
| 16. | First year of production of crude oil | | | 1889 |
| | natural gas | | | 1885 |
| 17. | First recorded production of crude oil (barrels) | 1889 | | 23,000 |
| | natural gas (Mcf) | 1906 | | 7,861 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 686,257 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................... 1953
20. Crude oil produced in year of largest production (barrels) .................... 12,823,000
21. Percent of crude oil produced by stripper wells .............................. 98.9%
22. Number of producing wells at end of 1978: Crude Oil ........................ 5,076
Gas & Condensate ................. 596
Total ......................... 5,672
23. Average daily production of crude oil per well at end of 1978 .................. 2.6
24. Percent of wells pumping or on artificial lift .................................. 100.0%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 12,690 | 12,650 | 14,559 | 13,077 |
| Natural Gas Liquids | 0 | 0 | 0 | 0 |
| Total Petroleum Liquids | 12,690 | 12,650 | 14,559 | 13,077 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 5,517 | 0 | 5,517 | 3,634 |
| Estimated Production | 4,785 | 0 | 4,785 | 173 |
| Net Change in Reserves | 732 | 0 | 732 | 3,461 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 489,865 | 782 | 490,647 | 227,409 |
| Total Production | 463,350 | 782 | 464,132 | 170,699 |
| Proved Reserves Dec. 31, 1978 | 26,515 | 0 | 26,515 | 56,710 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ................. *Dry Hole* 7,980
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Oil* 4,508
30. Wells and footage drilled in 1978:

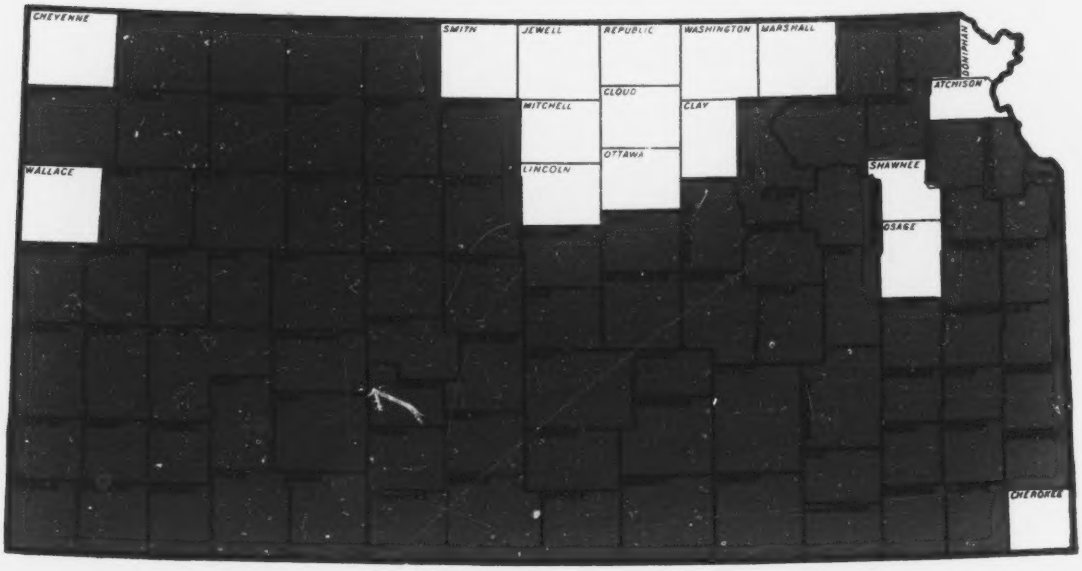
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 36 | 13.5 | 226 | 54.3 | 262 | 38.4 |
| Gas Wells | 4 | 1.5 | 39 | 9.4 | 43 | 6.3 |
| Dry Wells | 227 | 85.0 | 135 | 32.5 | 362 | 53.0 |
| Service Wells | 0 | 0 | 16 | 3.8 | 16 | 2.3 |
| Total Wells | 267 | 100.0 | 416 | 100.0 | 683 | 100.0 |
| Avg. Depth per Well | 2,014 | | 1,918 | | 1,956 | |
| Total Footage | 537,771 | | 797,841 | | 1,335,612 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 35,464 | 60.2 | 1,944 | 3.3 | 21.517 | 36.5 | 58,925 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............... .... ........ 4

# The Oil Producing Industry in KANSAS


CHEYENNE
SMITH
JEWELL
REPUBLIC
WASHINGTON
MARSHALL
DONIPHAN
ATCHISON
CLOUD
MITCHELL
CLAY
OTTAWA
LINCOLN
WALLACE
SHAWNEE
OSAGE
CHEROKEE

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 105 |
| 2. | Number of Counties with oil and/or gas production | | | 88 |
| 3. | Total land area of State (acres) | | | 52,343,680 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 3,418,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 8,582,600 |
| 6. | Percent of total land area productive or leased | | | 22.9% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 13,000,590,469 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 10.60 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 590,835,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 236,715,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 495,600,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 1,332,150,000 |
| 13. | Percent petroleum value to total all minerals | | | 83.7% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ........ Crude Petroleum | | | |
| | 2nd ........ Natural Gas | | | |
| | 3rd ........ Natural Gas Liquids | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 10,664 |
| 16. | First year of production of crude oil | | | 1889 |
| | natural gas | | | 1882 |
| 17. | First recorded production of crude oil (barrels) | 1889 | | 500 |
| | natural gas (Mcf) | 1906 | | 69,323 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 827,718 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................... 1956

20. Crude oil produced in year of largest production (barrels) .................... 124,204,000

21. Percent of crude oil produced by stripper wells .................... 76.9%

22. Number of producing wells at end of 1978: Crude Oil .................... 43,258

Gas & Condensate .................... 9,450

Total .................... 52,708

23. Average daily production of crude oil per well at end of 1978 .................... 3.5

24. Percent of wells pumping or on artificial lift .................... 99.5%

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 161,934 | 160,421 | 157,523 | 155,035 |
| Natural Gas Liquids | 81,803 | 82,516 | 84,992 | 88,493 |
| Total Petroleum Liquids | 243,017 | 242,937 | 242,515 | 243,528 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 46,096 | 74,627 | 120,723 | 1,205,077 |
| Estimated Production | 55,163 | 33,420 | 88,583 | 843,927 |
| Net Change in Reserves | −9,067 | 41,207 | 32,140 | 361,150 |
| 27. Production and new reserves found all time to December 31, 1978: | | | | |
| Total Reserves Found | 5,187,374 | 1,050,998 | 6,238,372 | 37,362,677 |
| Total Production | 4,837,007 | 587,237 | 5,424,244 | 25,075,336 |
| Proved Reserves Dec. 31, 1978 | 350,367 | 463,761 | 814,128 | 12,287,341 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .................... *Dry Hole* 8,713

29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas* 6,774

30. Wells and footage drilled in 1978:

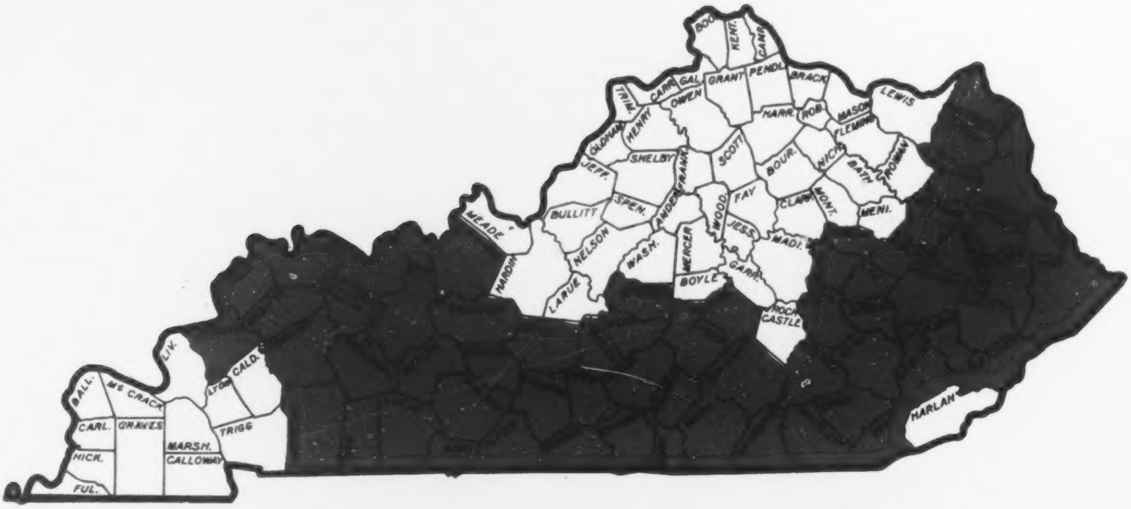
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 171 | 15.5 | 1,158 | 36.0 | 1,329 | 30.8 |
| Gas Wells | 79 | 7.1 | 846 | 26.3 | 925 | 21.4 |
| Dry Wells | 857 | 77.4 | 1,124 | 35.0 | 1,981 | 45.8 |
| Service Wells | 0 | 0 | 87 | 2.7 | 87 | 2.0 |
| Total Wells | 1,107 | 100.0 | 3,215 | 100.0 | 4,322 | 100.0 |
| Avg. Depth per Well | 3,794 | | 3,197 | | 3,350 | |
| Total Footage | 4,200,471 | | 10,278,766 | | 14,479,237 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 98,203 | 52.7 | 17,988 | 9.6 | 70,328 | 37.7 | 186,519 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .................... 76

# The Oil Producing Industry in KENTUCKY


BOO.
KENT.
CAMP.
TRIM.
CARR.
GAL.
GRANT
PENDL.
BRACK.
OWEN
HENRY
OLDHAM
HARR.
ROB.
MASON
LEWIS
FLEMING
SHELBY
SCOTT
NICH.
BATH
ROWAN
JEFF.
FRANK.
BOUR.
BULLITT
SPEN.
ANDER.
WOOD.
FAY.
CLARK
MONT.
MENI.
MEADE
NELSON
WASH.
MERCER
JESS.
MADI.
HARDIN
LARUE
BOYLE
GARR.
ROCK CASTLE
LIV.
CALD.
LYON
BALL.
McCRACK.
CARL.
GRAVES
TRIGG
MARSH.
CALLOWAY
HICK.
FUL.
HARLAN

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 120 |
| 2. | Number of Counties with oil and/or gas production | | | 63 |
| 3. | Total land area of State (acres) | | | 25,376,000 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 925,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 3,000,000 |
| 6. | Percent of total land area productive or leased | | | 15.5% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 1,892,894,461 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 13.60 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 77,890,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 17,800,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 39,617,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 135,307,000 |
| 13. | Percent petroleum value to total all minerals | | | 4.1% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st | Coal | | |
| | 2nd | Stone | | |
| | 3rd | Crude Petroleum | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 2,383 |
| 16. | First year of production of crude oil | | | 1860 |
| | natural gas | | | 1888 |
| 17. | First recorded production of crude oil (barrels) | 1883 | | 5,000 |
| | natural gas (Mcf) | 1906 | | 789 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 1,185,486 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .............................. 1959
20. Crude oil produced in year of largest production (barrels) .............................. 27,272,000
21. Percent of crude oil produced by stripper wells .............................. 82.4%
22. Number of producing wells at end of 1978: Crude Oil .............................. 14,149
    Gas & Condensate .............................. 7,776
    Total .............................. 21,925
23. Average daily production of crude oil per well at end of 1978 .............................. 1.2
24. Percent of wells pumping or on artificial lift .............................. 100.0%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 20,701 | 20,445 | 18,030 | 15,690 |
| Natural Gas Liquids | 10,329* | 9,883* | 8,125* | 10,966* |
| Total Petroleum Liquids | 31,030 | 20,328 | 26,155 | 26,656 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 2,182 | 2,439 | 4,621 | 31,219 |
| Estimated Production | 5,685 | 3,194 | 8,879 | 57,336 |
| Net Change in Reserves | −3,503 | −755 | −4,258 | −26,117 |

27. Production and new reserves found all time to December 31, 1978:

| | | | | |
|---|---|---|---|---|
| Total Reserves Found | 679,306 | 138,176 | 817,482 | 4,089,610 |
| Total Production | 647,473 | 98,923 | 746,396 | 3,370,681 |
| Proved Reserves Dec. 31, 1978 | 31,833 | 39,253 | 71,086 | 718,929 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .................. *Dry Hole* 15,200
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Oil* 7,598
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 40 | 11.4 | 265 | 43.4 | 305 | 31.7 |
| Gas Wells | 31 | 8.8 | 96 | 15.7 | 127 | 13.2 |
| Dry Wells | 280 | 79.8 | 212 | 34.8 | 492 | 51.2 |
| Service Wells | 0 | 0 | 37 | 6.1 | 37 | 3.9 |
| Total Wells | 351 | 100.0 | 610 | 100.0 | 961 | 100.0 |
| Avg. Depth per Well | 1,404 | | 1,342 | | 1,365 | |
| Total Footage | 492,661 | | 818,705 | | 1,311,366 | |

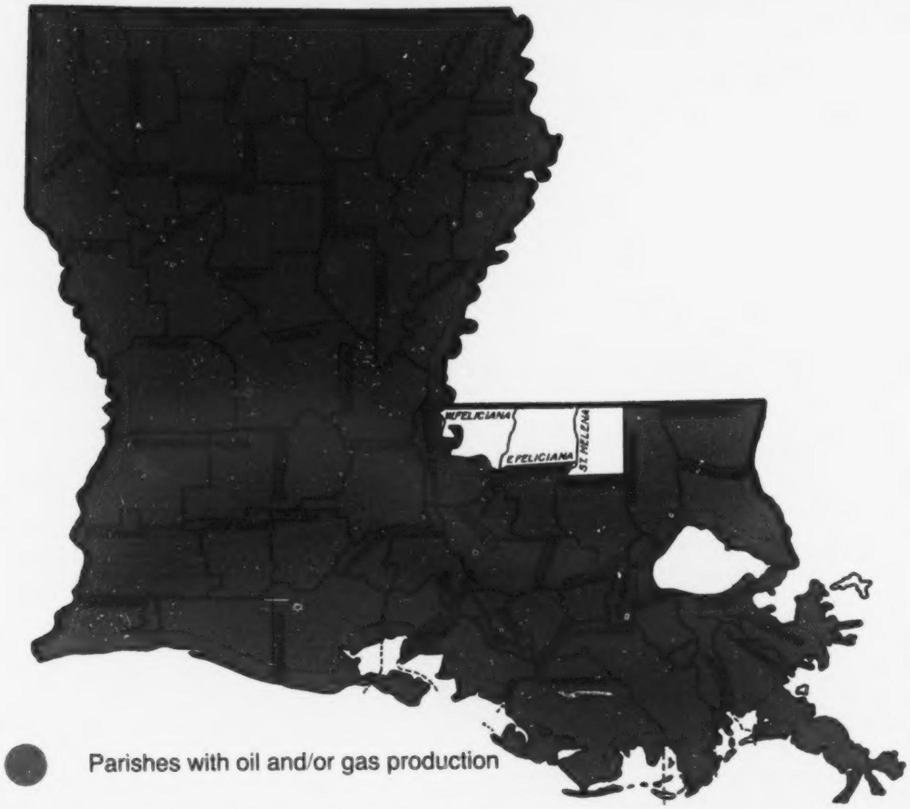
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 44,763 | 53.5 | 9,213 | 11.0 | 29,731 | 35.5 | 83,707 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .............................. 3

*Estimated.

# The Oil Producing Industry in LOUISIANA



## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Parishes in State | | | 64 |
| 2. | Number of Parishes with oil and/or gas production | | | 61 |
| 3. | Total land area of State (acres) | | | 28,755,200 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 4,208,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 13,412,500 |
| 6. | Percent of total land area productive or leased | | | 61.3% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 64,238,940,558 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 9.00 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 4,812,635,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 866,100,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 5,928,766,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 11,607,701,000 |
| 13. | Percent petroleum value to total all minerals | | | 96.8% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Natural Gas | | | |
| | 2nd ... Crude Petroleum | | | |
| | 3rd ... Natural Gas Liquids | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 69,000 |
| 16. | First year of production of crude oil | | | 1902 |
| | natural gas | | | 1905 |
| 17. | First recorded production of crude oil (barrels) | 1902 | | 549,000 |
| | natural gas (Mcf) | 1905 | | 31 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 466,346,421 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................... 1971
20. Crude oil produced in year of largest production (barrels) ...................... 935,243,000
21. Percent of crude oil produced by stripper wells ................................ 1.4%
22. Number of producing wells at end of 1978: Crude Oil ........................ 24,500
Gas & Condensate ................ 10,135
Total ........................ 34,635
23. Average daily production of crude oil per well at end of 1978 .................. 58.0
24. Percent of wells pumping or on artificial lift .................................. 90.8%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 1,783,123 | 1,657,107 | 1,542,205 | 1,465,033 |
| Natural Gas Liquids | 371,293 | 324,533 | 322,638 | 308,964 |
| Total Petroleum Liquids | 2,154,416 | 1,981,640 | 1,864,843 | 1,773,997 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 238,747 | 157,559 | 396,306 | 4,049,739 |
| Estimated Production | 458,755 | 192,374 | 651,129 | 7,061,561 |
| Net Change in Reserves | −220,008 | −34,815 | −254,823 | −3,011,822 |

27. Production and new reserves found all time to December 31, 1978:

| | | | | |
|---|---|---|---|---|
| Total Reserves Found | 20,305,572 | 5,442,921 | 25,748,493 | 194,429,430 |
| Total Production | 17,412,171 | 4,127,376 | 21,539,547 | 144,755,282 |
| Proved Reserves Dec. 31, 1978 | 2,893,401 | 1,315,545 | 4,208,946 | 49,674,148 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ................. *Dry Hole* 25,600
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas* 21,862
30. Wells and footage drilled in 1978:

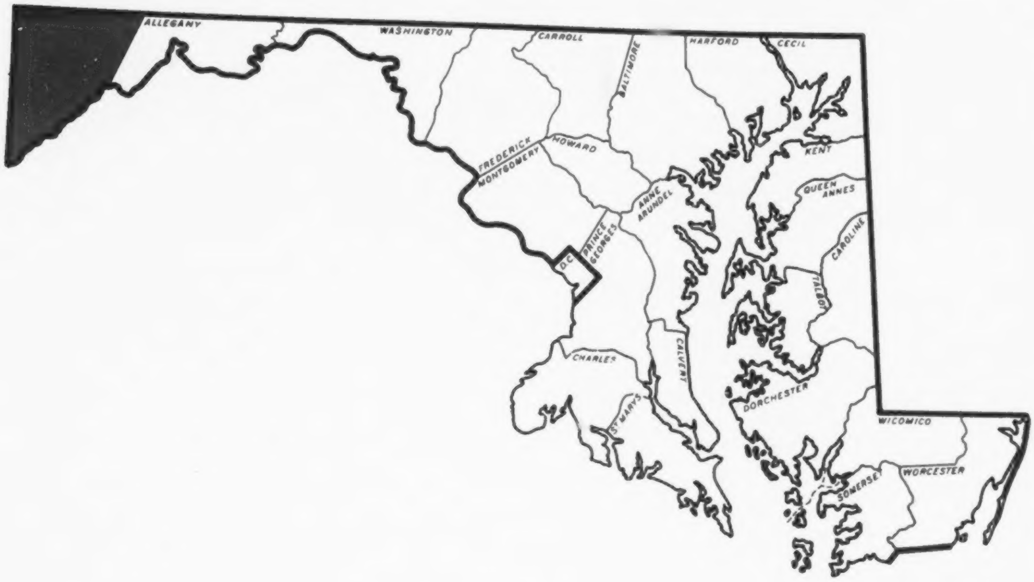
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 26 | 3.3 | 859 | 28.8 | 885 | 23.5 |
| Gas Wells | 83 | 10.6 | 1,203 | 40.3 | 1,286 | 34.1 |
| Dry Wells | 672 | 86.1 | 887 | 29.7 | 1,559 | 41.4 |
| Service Wells | 0 | 0 | 37 | 1.2 | 37 | 1.0 |
| Total Wells | 781 | 100.0 | 2,986 | 100.0 | 3,767 | 100.0 |
| Avg. Depth per Well | 9,940 | | 6,361 | | 7,103 | |
| Total Footage | 7,762,868 | | 18,993,091 | | 26,755,959 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 68,953 | 48.4 | 20,559 | 14.5 | 52,857 | 37.1 | 142,369 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................ 338

# The Oil Producing Industry in MARYLAND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CAROLINE
TALBOT
CHARLES
CALVERT
DORCHESTER
ST MARYS
WICOMICO
SOMERSET
WORCESTER

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 23 |
| 2. | Number of Counties with oil and/or gas production | | | 1 |
| 3. | Total land area of State (acres) | | | 6,330,240 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 14,200 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 271,700 |
| 6. | Percent of total land area productive or leased | | | 4.5% |
| 7. | Value at wells of natural gas produced all time to January 1, 1979 | | $ | 6,705,000 |
| 8. | Average field price of natural gas per Mcf in 1978 | | $ | 0.45 |
| 9. | Value at wells of crude oil produced in 1978 | | | Not Applicable |
| 10. | Value of natural gas liquids produced in 1978 | | | Not Applicable |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 38,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 38,000 |
| 13. | Percent petroleum value to total all minerals | | | >0.1% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st | Coal | | |
| | 2nd | Stone | | |
| | 3rd | Cement | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 51 |
| 16. | First year of production of natural gas | | | 1943 |
| 17. | First recorded production of natural gas (Mcf) | 1949 | | 3,422 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 3,477 |

## PRODUCTION AND RESERVES

| | | |
|---|---|---|
| 19. | Year of largest production (natural gas) | 1957 |
| 20. | Natural gas produced in year of largest production (Mcf) | 4,649 |
| 21. | Percent of crude oil produced by stripper wells | Not Applicable |
| 22. | Number of producing wells at end of 1978: Gas & Condensate | 8* |
| 23. | Average daily production of natural gas per well at end of 1978 (cu. ft.) | 34,247 |
| 24. | Percent of wells pumping or on artificial lift | Not Available |

25. Average production in Mcf:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Natural Gas | 93 | 75 | 82 | 100 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 0 | 0 | 0 | 60,521 |
| Estimated Production | 0 | 0 | 0 | 917 |
| Net Change in Reserves | 0 | 0 | 0 | 59,604 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 0 | 0 | 0 | 263,976 |
| Total Production | 0 | 0 | 0 | 60,433 |
| Proved Reserves Dec. 31, 1978 | 0 | 0 | 0 | 203,543 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 11,617 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Gas* | 8,658 |

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Gas Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Dry Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Service Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Avg. Depth per Well | 0 | | 0 | | 0 | |
| Total Footage | 0 | | 0 | | 0 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 0 | 0 | 72 | 61.5 | 45 | 38.5 | 117 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................ >1

*Estimated.
>Less Than.

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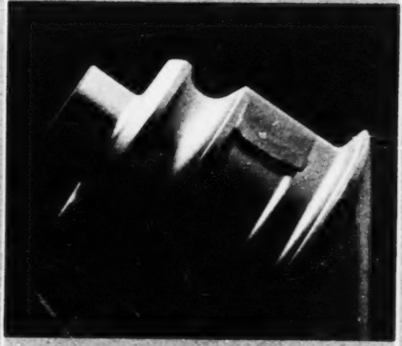

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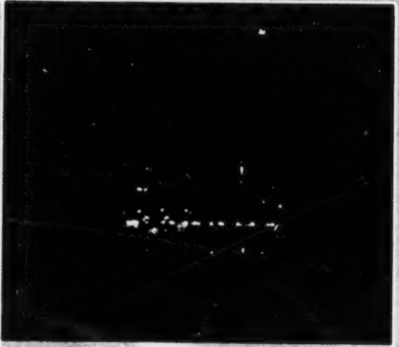

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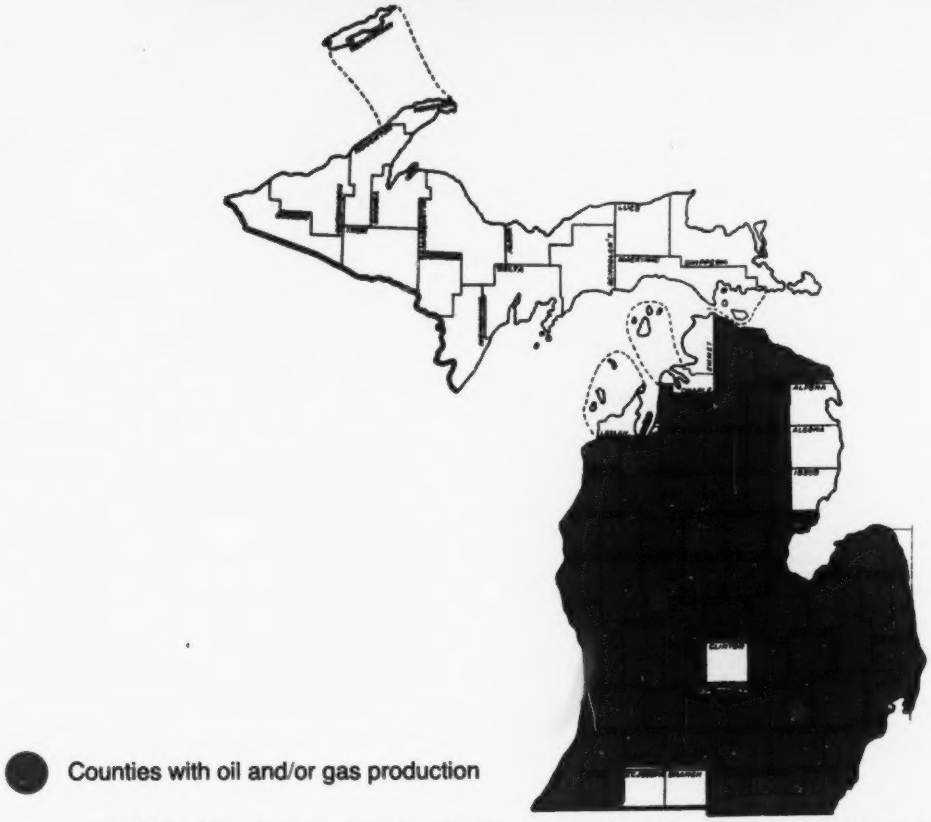
# The Oil Producing Industry in MICHIGAN



## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 83 |
| 2. | Number of Counties with oil and/or gas production | | | 58 |
| 3. | Total land area of State (acres) | | | 36,362,880 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 505,201 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 12,035,000 |
| 6. | Percent of total land area productive or leased | | | 34.5% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 2,877,817,246 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 11.60 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 401,930,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 86,975,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 162,850,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 651,755,000 |
| 13. | Percent petroleum value to total all minerals | | | 35.0% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Crude Petroleum | | | |
| | 2nd ... Iron Ore | | | |
| | 3rd ... Cement | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 3,570 |
| 16. | First year of production of crude oil | | | 1899 |
| | natural gas | | | 1909 |
| 17. | First recorded production of crude oil (barrels) | 1912 | | 4,000 |
| | natural gas (Mcf) | 1909 | | .510 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 12,058,695 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .......... 1978
20. Crude oil produced in year of largest production (barrels) .......... 34,649,000
21. Percent of crude oil produced by stripper wells .......... 18.9%
22. Number of producing wells at end of 1978:

| | |
|---|---|
| Crude Oil | 3,890 |
| Gas & Condensate | 376 |
| Total | 4,266 |

23. Average daily production of crude oil per well at end of 1978 .......... 24.1
24. Percent of wells pumping or on artificial lift .......... 85.9%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 66,904 | 83,117 | 90,315 | 94,929 |
| Natural Gas Liquids | 5,491 | 12,893 | 21,696 | 26,258 |
| Total Petroleum Liquids | 72,395 | 96,010 | 112,011 | 121,187 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 91,584 | 29,667 | 121,251 | 136,605 |
| Estimated Production | 34,648 | 9,172 | 43,820 | 159,224 |
| Net Change in Reserves | 56,936 | 20,495 | 77,431 | −22,619 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 959,043 | 97,856 | 1,056,899 | 2,854,808 |
| Total Production | 768,879 | 32,163 | 801,042 | 1,086,227 |
| Proved Reserves Dec. 31, 1978 | 190,164 | 65,693 | 255,857 | 1,768,581 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .......... *Dry Hole* 17,466
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas/Condensate* 7,512
30. Wells and footage drilled in 1978:

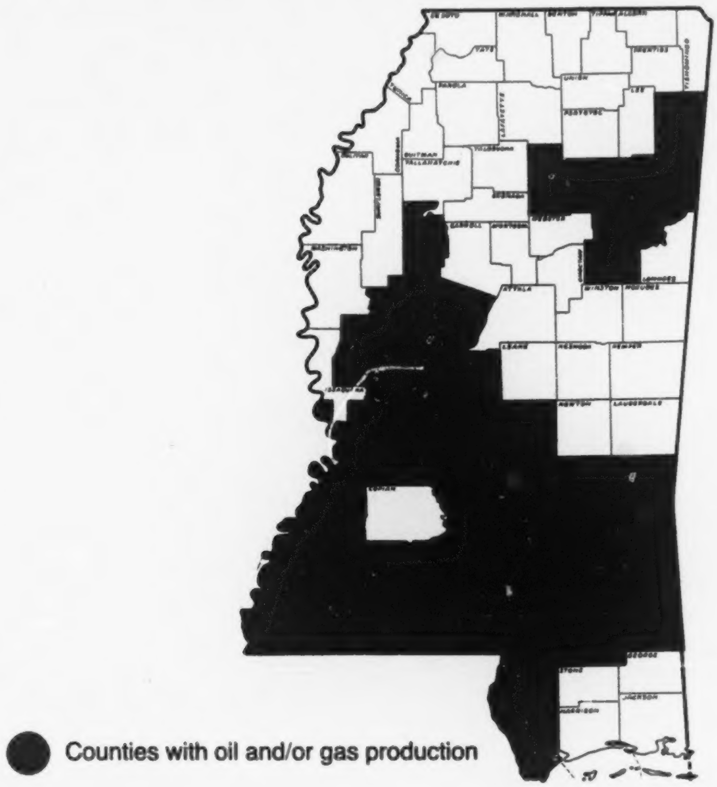
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 27 | 10.2 | 107 | 42.0 | 134 | 25.7 |
| Gas Wells | 23 | 8.6 | 31 | 12.1 | 54 | 10.4 |
| Dry Wells | 216 | 81.2 | 103 | 40.4 | 319 | 61.2 |
| Service Wells | 0 | 0 | 14 | 5.5 | 14 | 2.7 |
| Total Wells | 266 | 100.0 | 255 | 100.0 | 521 | 100.0 |
| Avg. Depth per Well | 4,613 | | 4,510 | | 4,563 | |
| Total Footage | 1,227,130 | | 1,150,035 | | 2,377,165 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 12,057 | 40.3 | 2,364 | 7.9 | 15,524 | 51.8 | 29,945 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .......... 24

# The Oil Producing Industry in MISSISSIPPI



## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 82 |
| 2. | Number of Counties with oil and/or gas production | | | 40 |
| 3. | Total land area of State (acres) | | | 30,269,440 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 603,300 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 7,047,800 |
| 6. | Percent of total land area productive or leased | | | 25.3% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 5,201,250,706 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 8.80 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 347,550,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 1,420,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 88,460,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 437,430,000 |
| 13. | Percent petroleum value to total all minerals | | | 84.3% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Crude Petroleum | | | |
| | 2nd ... Natural Gas | | | |
| | 3rd ... Cement | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 7,612 |
| 16. | First year of production of crude oil | | | 1889 |
| | natural gas | | | 1923 |
| 17. | First recorded production of crude oil (barrels) | 1926 | | 107,000 |
| | natural gas (Mcf) | 1926 | | 5,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 27,756,513 |

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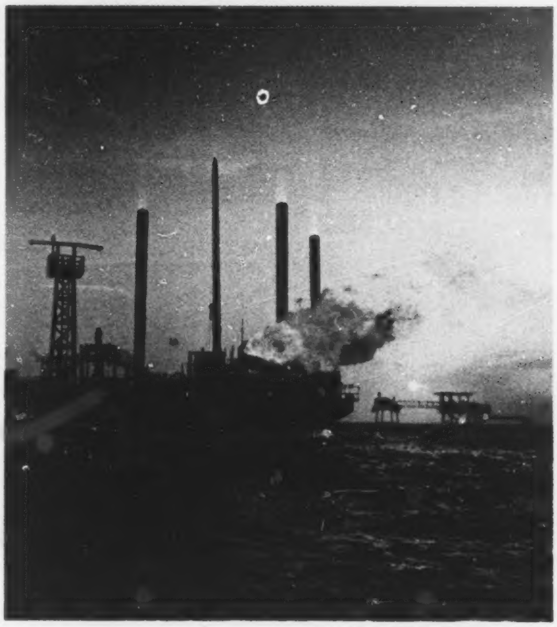

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## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) ........ 1970

20. Crude oil produced in year of largest production (barrels) ........ 65,119,000

21. Percent of crude oil produced by stripper wells ........ 3.1%

22. Number of producing wells at end of 1978:

| | |
|---|---|
| Crude Oil | 2,254 |
| Gas & Condensate | 402 |
| Total | 2,656 |

23. Average daily production of crude oil per well at end of 1978 ........ 49.6

24. Percent of wells pumping or on artificial lift ........ 96.1%

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 127,710 | 125,880 | 117,868 | 108,203 |
| Natural Gas Liquids | 1,028* | 991* | 770* | 2,318* |
| Total Petroleum Liquids | 128,738 | 126,871 | 118,638 | 110,521 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 22,711 | −321‡ | 22,390 | 234,998 |
| Estimated Production | 37,756 | 2,099 | 39,855 | 131,617 |
| Net Change in Reserves | −15,045 | −2,420 | −17,465 | 103,381 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 1,856,866 | 90,429 | 1,947,295 | 6,707,751 |
| Total Production | 1,669,279 | 77,722 | 1,747,001 | 5,297,237 |
| Proved Reserves Dec. 31, 1978 | 187,587 | 12,707 | 200,294 | 1,410,514 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ........ *Dry Hole* 25,460

29. Deepest producing well drilled to January 1, 1979 (feet) ........ *Gas* 21,727

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 22 | 8.9 | 50 | 20.7 | 72 | 14.7 |
| Gas Wells | 8 | 3.2 | 61 | 25.2 | 69 | 14.1 |
| Dry Wells | 217 | 87.9 | 128 | 52.9 | 345 | 70.6 |
| Service Wells | 0 | 0 | 3 | 1.2 | 3 | 0.6 |
| Total Wells | 247 | 100.0 | 242 | 100.0 | 489 | 100.0 |
| Avg. Depth per Well | 8,758 | | 9,141 | | 8,947 | |
| Total Footage | 2,163,228 | | 2,212,042 | | 4,375,270 | |

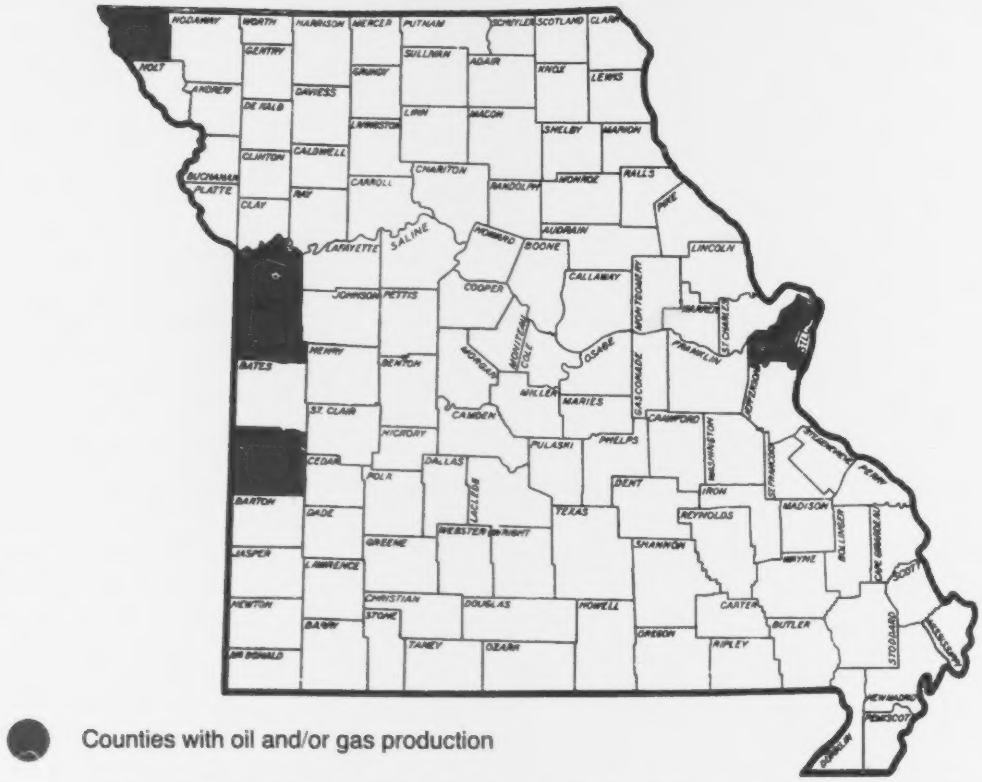
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 6,360 | 34.1 | 870 | 4.7 | 11,397 | 61.2 | 18,627 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ........ 45

*Estimated.
‡Downward Revision of Previous Estimate.

# The Oil Producing Industry in MISSOURI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WORTH
HARRISON
MERCER
PUTNAM
SCHUYLER
SCOTLAND
CLARK
HOLT
GENTRY
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ADAIR
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MACON
SHELBY
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PHELPS
WASHINGTON
STE GENEVIEVE
CEDAR
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GREENE
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JASPER
LAWRENCE
SCOTT
CHRISTIAN
DOUGLAS
HOWELL
CARTER
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STONE
BUTLER
STODDARD
MISSISSIPPI
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TANEY
OZARK
OREGON
RIPLEY
MC DONALD
NEW MADRID
PEMISCOT
DUNKLIN
● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 114 |
| 2. | Number of Counties with oil and/or gas production | | | 5 |
| 3. | Total land area of State (acres) | | | 44,156,800 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 1,900 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 450,000 |
| 6. | Percent of total land area productive or leased | | | 1.0% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 7,712,175 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 12.25 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 820,000 |
| 10. | Value of natural gas liquids produced in 1978 | | | Not Applicable |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 13,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 833,000 |
| 13. | Percent petroleum value to total all minerals | | | 0.1% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Lead | | | |
| | 2nd ... Cement | | | |
| | 3rd ... Stone | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 110 |
| 16. | First year of production of crude oil | | | 1888 |
| | natural gas | | | 1887 |
| 17. | First recorded production of crude oil (barrels) | 1889 | | 20 |
| | natural gas (Mcf) | 1906 | | 33,560 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 0 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .......... 1967

20. Crude oil produced in year of largest production (barrels) .......... 75,000

21. Percent of crude oil produced by stripper wells .......... 99.2%

22. Number of producing wells at end of 1978:

| | |
|---|---|
| Crude Oil | 161 |
| Gas & Condensate | 3* |
| Total | 164 |

23. Average daily production of crude oil per well at end of 1978 .......... 3.7

24. Percent of wells pumping or on artificial lift .......... 100.0%

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 137* | 167 | 167 | 184 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 303 | 0 | 303 | 0 |
| Estimated Production | 98 | 0 | 98 | 0 |
| Net Change in Reserves | 205 | 0 | 205 | 0 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 2,781 | 0 | 2,781 | 2,483 |
| Total Production | 2,076 | 0 | 2,076 | 980 |
| Proved Reserves Dec. 31, 1978 | 705 | 0 | 705 | 1,503 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .......... *Dry Hole* 4,902

29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Oil* 2,975

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 1 | 14.3 | 23 | 54.8 | 24 | 49.0 |
| Gas Wells | 1 | 14.3 | 0 | 0 | 1 | 2.0 |
| Dry Wells | 5 | 71.4 | 2 | 4.8 | 7 | 14.3 |
| Service Wells | 0 | 0 | 17 | 40.4 | 17 | 34.7 |
| Total Wells | 7 | 100.0 | 42 | 100.0 | 49 | 100.0 |
| Avg. Depth per Well | 641 | | 291 | | 341 | |
| Total Footage | 4,485 | | 12,217 | | 16,702 | |

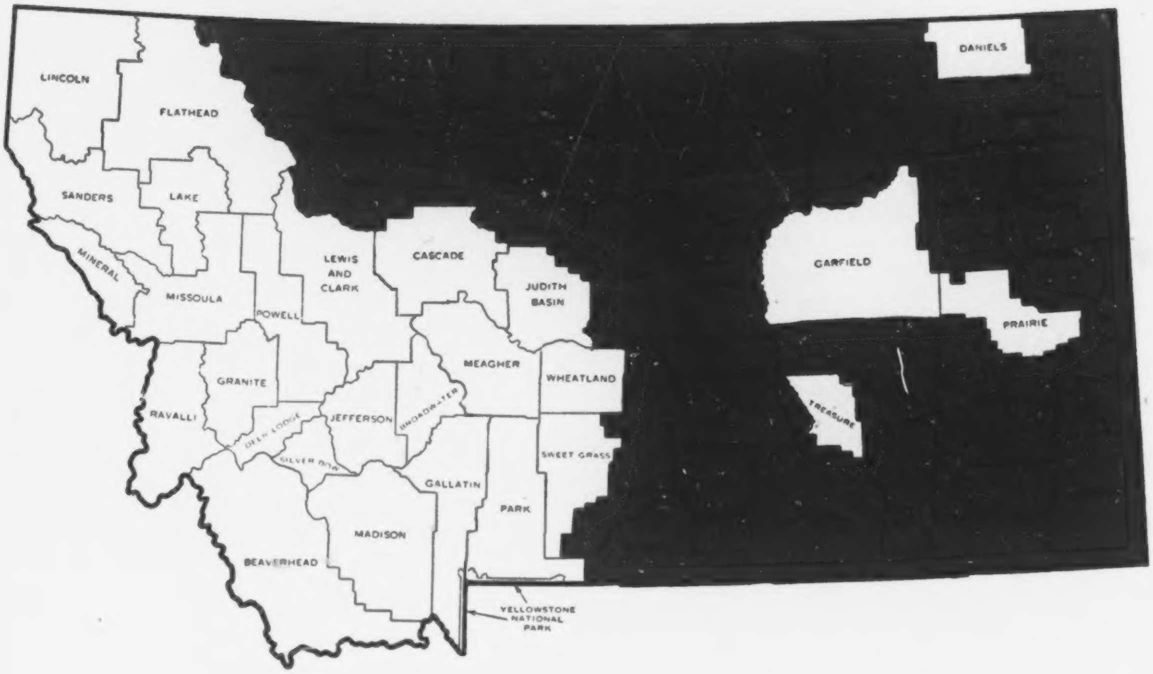
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 229 | 19.6 | 174 | 14.9 | 763 | 65.5 | 1,166 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .......... 0

*Estimated.

# The Oil Producing Industry in MONTANA


LINCOLN
FLATHEAD
SANDERS
LAKE
MINERAL
MISSOULA
POWELL
LEWIS AND CLARK
CASCADE
JUDITH BASIN
GRANITE
MEAGHER
WHEATLAND
RAVALLI
DEER LODGE
JEFFERSON
BROADWATER
SILVER BOW
SWEET GRASS
GALLATIN
PARK
MADISON
BEAVERHEAD
YELLOWSTONE NATIONAL PARK
DANIELS
GARFIELD
PRAIRIE
TREASURE

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 56 |
| 2. | Number of Counties with oil and/or gas production | | | 29 |
| 3. | Total land area of State (acres) | | | 93,175,680 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 613,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 33,340,000 |
| 6. | Percent of total land area productive or leased | | | 36.4% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 3,190,172,403 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 9.20 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 279,965,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 2,450,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 37,217,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 319,632,000 |
| 13. | Percent petroleum value to total all minerals | | | 45.8% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Crude Petroleum | | | |
| | 2nd ... Coal | | | |
| | 3rd ... Copper | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 2,789 |
| 16. | First year of production of crude oil | | | 1916 |
| | natural gas | | | 1915 |
| 17. | First recorded production of crude oil (barrels) | 1916 | | 45,000 |
| | natural gas (Mcf) | 1915 | | 6 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 7,684,605 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................... 1968
20. Crude oil produced in year of largest production (barrels) .................... 48,460,000
21. Percent of crude oil produced by stripper wells .............................. 10.0%
22. Number of producing wells at end of 1978: Crude Oil ........................ 3,275
Gas & Condensate ................... 1,377
Total ......................... 4,652
23. Average daily production of crude oil per well at end of 1978 .................. 24.8
24. Percent of wells pumping or on artificial lift ................................. 90.0%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 89,984 | 89,656 | 89,534 | 83,373 |
| Natural Gas Liquids | 1,617* | 1,618* | 1,150* | 1,193* |
| Total Petroleum Liquids | 91,601 | 91,274 | 90,684 | 84,566 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 18,952 | −633‡ | 18,319 | 5,073 |
| Estimated Production | 30,087 | 315 | 30,402 | 57,387 |
| Net Change in Reserves | −11,135 | −948 | −12,083 | −52,314 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 1,128,650 | 25,986 | 1,154,636 | 2,688,428 |
| Total Production | 988,184 | 22,687 | 1,010,871 | 1,696,760 |
| Proved Reserves Dec. 31, 1978 | 140,466 | 3,299 | 143,765 | 991,668 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ................. *Dry Hole* 15,723
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Oil* 12,915
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 37 | 12.0 | 81 | 22.2 | 118 | 17.5 |
| Gas Wells | 18 | 5.8 | 135 | 37.0 | 153 | 22.7 |
| Dry Wells | 253 | 82.2 | 147 | 40.3 | 400 | 59.5 |
| Service Wells | 0 | 0 | 2 | 0.5 | 2 | 0.3 |
| Total Wells | 308 | 100.0 | 365 | 100.0 | 673 | 100.0 |
| Avg. Depth per Well | 4,826 | | 3,114 | | 3,898 | |
| Total Footage | 1,486,551 | | 1,136,531 | | 2,623,082 | |

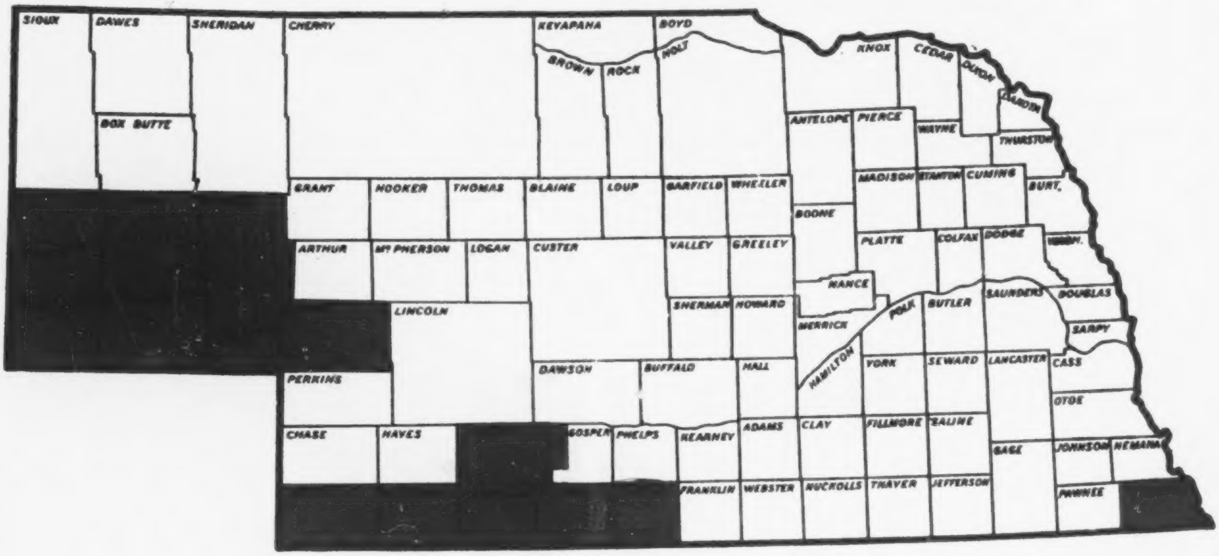
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 8,624 | 38.2 | 2,917 | 12.9 | 11,024 | 48.9 | 22,565 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................. 30

*Estimated.
‡Downward Revision of Previous Estimate.

# The Oil Producing Industry in NEBRASKA


SIOUX
DAWES
SHERIDAN
CHERRY
KEYAPAHA
BOYD
BROWN
ROCK
HOLT
KNOX
CEDAR
DIXON
DAKOTA
BOX BUTTE
ANTELOPE
PIERCE
WAYNE
THURSTON
GRANT
HOOKER
THOMAS
BLAINE
LOUP
GARFIELD
WHEELER
MADISON
STANTON
CUMING
BURT
BOONE
ARTHUR
Mc PHERSON
LOGAN
CUSTER
VALLEY
GREELEY
PLATTE
COLFAX
DODGE
WASH.
NANCE
LINCOLN
SHERMAN
HOWARD
SAUNDERS
DOUGLAS
MERRICK
POLK
BUTLER
SARPY
PERKINS
DAWSON
BUFFALO
HALL
HAMILTON
YORK
SEWARD
LANCASTER
CASS
OTOE
CHASE
HAYES
GOSPER
PHELPS
KEARNEY
ADAMS
CLAY
FILLMORE
SALINE
GAGE
JOHNSON
NEMAHA
FRANKLIN
WEBSTER
NUCKOLLS
THAYER
JEFFERSON
PAWNEE

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 93 |
| 2. | Number of Counties with oil and/or gas production | | | 15 |
| 3. | Total land area of State (acres) | | | 48,949,120 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 236,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 10,150,000 |
| 6. | Percent of total land area productive or leased | | | 21.2% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 1,210,417,382 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 11.10 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 65,035,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 2,200,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 2,100,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 69,335,000 |
| 13. | Percent petroleum value to total all minerals | | | 45.8% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st | Crude Petroleum | | |
| | 2nd | Cement | | |
| | 3rd | Sand and Gravel | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 647 |
| 16. | First year of production of crude oil | | | 1939 |
| | natural gas | | | 1949 |
| 17. | First recorded production of crude oil (barrels) | 1939 | | 2,000 |
| | natural gas (Mcf) | 1951 | | 20,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 1,318,535 |

## PRODUCTION AND RESERVES

| | | | |
|---|---|---|---|
| 19. | Year of largest production (crude oil) | | 1962 |
| 20. | Crude oil produced in year of largest production (barrels) | | 24,894,000 |
| 21. | Percent of crude oil produced by stripper wells | | 33.7% |
| 22. | Number of producing wells at end of 1978: Crude Oil | 1,455 | |
| | Gas & Condensate | 22 | |
| | Total | 1,477 | |
| 23. | Average daily production of crude oil per well at end of 1978 | | 10.9 |
| 24. | Percent of wells pumping or on artificial lift | | 100.0% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 16,767 | 16,891 | 16,351 | 16,052 |
| Natural Gas Liquids | 603* | 565* | 455 | 356 |
| Total Petroleum Liquids | 17,370 | 17,456 | 16,806 | 16,408 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 3,868 | 0 | 3,868 | 7,621 |
| Estimated Production | 5,587 | 134 | 5,721 | 2,904 |
| Net Change in Reserves | −1,719 | 457 | −1,853 | 4,717 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 398,781 | 17,622 | 416,403 | 382,350 |
| Total Production | 369,490 | 17,165 | 386,655 | 309,511 |
| Proved Reserves Dec. 31, 1978 | 29,291 | 457 | 29,748 | 72,839 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 8,875 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Oil* | 7,438 |

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 20 | 9.1 | 80 | 49.1 | 100 | 26.0 |
| Gas Wells | 8 | 3.6 | 4 | 2.5 | 12 | 3.1 |
| Dry Wells | 193 | 87.3 | 76 | 46.6 | 269 | 70.1 |
| Service Wells | 0 | 0 | 3 | 1.8 | 3 | 0.8 |
| Total Wells | 221 | 100.0 | 163 | 100.0 | 384 | 100.0 |
| Avg. Depth per Well | 5,128 | | 4,824 | | 4,999 | |
| Total Footage | 1,133,222 | | 786,351 | | 1,919,573 | |

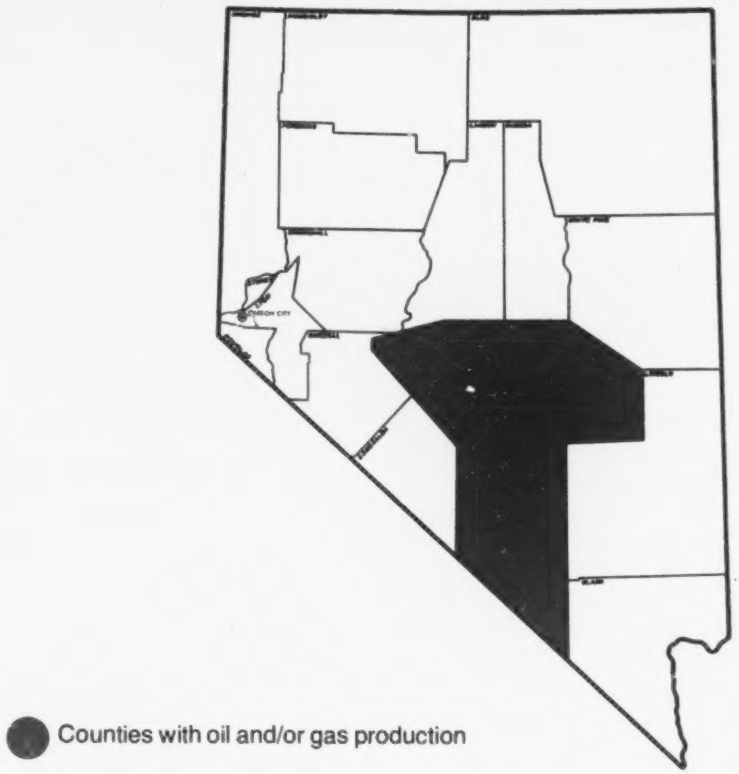
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 4,109 | 29.5 | 134 | 1.0 | 9,678 | 69.5 | 13,921 | 100.0 |

| | | |
|---|---|---|
| 32. | Rotary Drilling Rigs Active in 1978 (average) | 10 |

*Estimated.

# The Oil Producing Industry in NEVADA



## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | |
|---|---|---|---|
| 1. | Number of Counties in State | | 16 |
| 2. | Number of Counties with oil and/or gas production | | 1 |
| 3. | Total land area of State (acres) | | 70,328,960 |
| 4. | Area proved productive of oil and/or gas (acres) | | 3,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | 12,750,000 |
| 6. | Percent of total land area productive or leased | | 18.1% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | $ | 30,065,343 |
| 8. | Average field price of crude oil per barrel in 1978 | $ | 12.00 |
| 9. | Value at wells of crude oil produced in 1978 | $ | 14,280,000 |
| 10. | Value of natural gas liquids produced in 1978 | | Not Applicable |
| 11. | Value at wells of natural gas produced in 1978 | | Not Applicable |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | $ | 14,280,000 |
| 13. | Percent petroleum value to total all minerals | | 2.6% |
| 14. | Principal mineral products in order of value: | | |
| | 1st ... Copper | | |
| | 2nd ... Gold | | |
| | 3rd ... Sand and Gravel | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | 309 |
| 16. | First year of production of crude oil | | 1954 |
| 17. | First recorded production of crude oil (barrels) ... 1954 | | 33,000 |
| 18. | State and local severance and production taxes paid in 1978 | | 0 |

## PRODUCTION AND RESERVES

| | | |
|---|---|---|
| 19. | Year of largest production (crude oil) | 1978 |
| 20. | Crude oil produced in year of largest production (barrels) | 1,190,000 |
| 21. | Percent of crude oil produced by stripper wells | Not Applicable |
| 22. | Number of producing wells at end of 1978: Crude Oil | 21* |
| | Gas & Condensate | 0 |
| | Total | 21 |
| 23. | Average daily production of crude oil per well at end of 1978 | 155.2 |
| 24. | Percent of wells pumping or on artificial lift | 100.0% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 321* | 391 | 1,811 | 3,260 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 1,338 | 0 | 1,338 | 0 |
| Estimated Production | 960 | 0 | 960 | 0 |
| Net Change in Reserves | 378 | 0 | 378 | 0 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 5,988 | 0 | 5,988 | 0 |
| Total Production | 4,710 | 0 | 4,710 | 0 |
| Proved Reserves Dec. 31, 1978 | 1,278 | 0 | 1,278 | 0 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 13,832 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Oil* | 8,581 |

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 0 | 0 | 2 | 66.7 | 2 | 12.5 |
| Gas Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Dry Wells | 13 | 100.0 | 1 | 33.3 | 14 | 87.5 |
| Service Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Wells | 13 | 100.0 | 3 | 100.0 | 16 | 100.0 |
| Avg. Depth per Well | 5,958 | | 4,395 | | 5,665 | |
| Total Footage | 77,455 | | 13,184 | | 90,639 | |

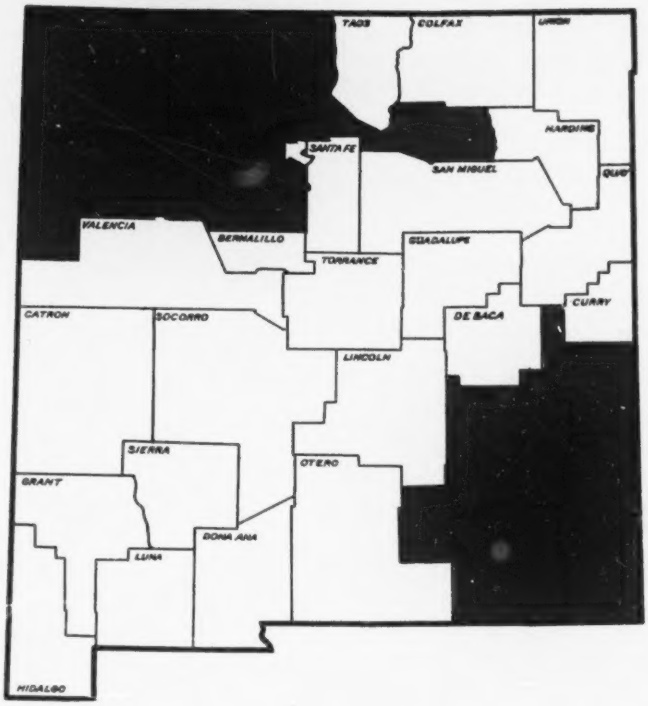
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 23 | 11.1 | 0 | 0 | 185 | 88.9 | 208 | 100.0 |

| | | |
|---|---|---|
| 32. | Rotary Drilling Rigs Active in 1978 (average) | 3 |

*Estimated.

# The Oil Producing Industry in NEW MEXICO


TAOS
COLFAX
UNION
HARDING
SANTA FE
SAN MIGUEL
QUAY
VALENCIA
BERNALILLO
TORRANCE
GUADALUPE
CURRY
CATRON
SOCORRO
DE BACA
LINCOLN
SIERRA
OTERO
GRANT
DONA ANA
LUNA
HIDALGO

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 32 |
| 2. | Number of Counties with oil and/or gas production | | | 9 |
| 3. | Total land area of State (acres) | | | 77,703,680 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 2,850,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 26,500,000 |
| 6. | Percent of total land area productive or leased | | | 37.8% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 11,139,713,320 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 9.81 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 815,545,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 308,090,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 1,084,421,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 2,208,056,000 |
| 13. | Percent petroleum value to total all minerals | | | 71.0% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st .......... Natural Gas | | | |
| | 2nd .......... Crude Petroleum | | | |
| | 3rd .......... Natural Gas Liquids | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 9,872 |
| 16. | First year of production of crude oil | | | 1911 |
| | natural gas | | | 1924 |
| 17. | First recorded production of crude oil (barrels) | 1924 | | 98,000 |
| | natural gas (Mcf) | 1926 | | 921 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 151,820,384 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................... 1969
20. Crude oil produced in year of largest production (barrels) ...................... 129,227,000
21. Percent of crude oil produced by stripper wells .............................. 13.2%
22. Number of producing wells at end of 1978: Crude Oil ........................ 14,398
Gas & Condensate ................ 12,207
Total ........................ 26,425
23. Average daily production of crude oil per well at end of 1978 .................. 2.0
24. Percent of wells pumping or on artificial lift ................................ 85.1%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 260,447 | 251,721 | 238,967 | 227,764 |
| Natural Gas Liquids | 107,967 | 115,148 | 123,055 | 120,236 |
| Total Petroleum Liquids | 368,414 | 366,869 | 362,022 | 348,000 |

26. Production and new reserves found in 1978:

| | Crude Oil (Thousand Barrels) | Natural Gas Liquids (Thousand Barrels) | Total Liquids Petroleum (Thousand Barrels) | Natural Gas (Mil. Cu. Ft.) |
|---|---|---|---|---|
| New Reserves Found | 73,262 | 75,871 | 149,133 | 2,399,310 |
| Estimated Production | 78,130 | 36,344 | 114,474 | 1,068,933 |
| Net Change in Reserves | −4,868 | 39,527 | 34,659 | 1,330,377 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 5,169,053 | 1,316,395 | 6,485,448 | 43,304,272 |
| Total Production | 4,683,413 | 864,723 | 5,548,136 | 30,042,783 |
| Proved Reserves Dec. 31, 1978 | 485,640 | 451,672 | 937,312 | 13,261,489 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .................. *Dry Hole* 22,926
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas* 17,544
30. Wells and footage drilled in 1978:

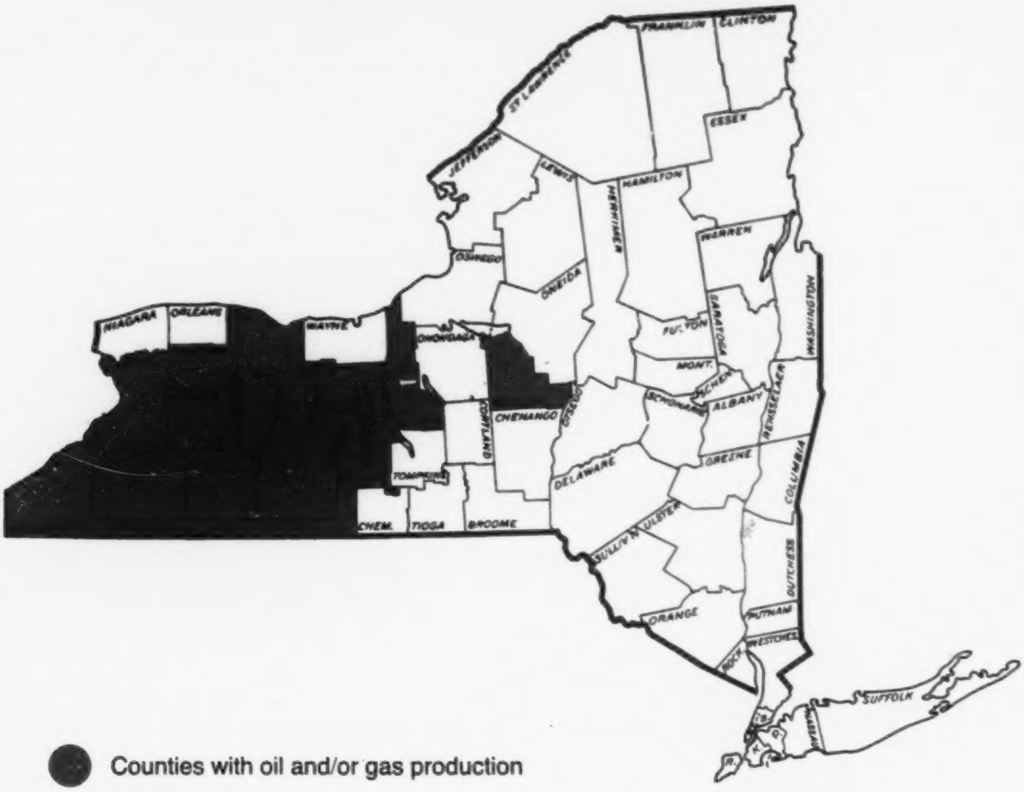
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 14 | 8.0 | 433 | 30.7 | 447 | 28.2 |
| Gas Wells | 36 | 20.7 | 782 | 55.5 | 818 | 51.7 |
| Dry Wells | 124 | 71.3 | 156 | 11.1 | 280 | 17.7 |
| Service Wells | 0 | 0 | 38 | 2.7 | 38 | 2.4 |
| Total Wells | 174 | 100.0 | 1,409 | 100.0 | 1,583 | 100.0 |
| Avg. Depth per Well | 6,275 | | 5,357 | | 5,458 | |
| Total Footage | 1,091,719 | | 7,548,274 | | 8,639,993 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 24,182 | 52.1 | 11,866 | 25.5 | 10,393 | 22.4 | 46,441 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................ 76

# The Oil Producing Industry in NEW YORK


FRANKLIN
CLINTON
ST LAWRENCE
ESSEX
JEFFERSON
LEWIS
HAMILTON
HERKIMER
WARREN
OSWEGO
ONEIDA
SARATOGA
WASHINGTON
FULTON
NIAGARA
ORLEANS
WAYNE
ONONDAGA
MONT.
SCHOHARIE
ALBANY
RENSSELAER
CHENANGO
OTSEGO
CORTLAND
DELAWARE
GREENE
COLUMBIA
TOMPKINS
CHEM.
TIOGA
BROOME
SULLIVAN
ULSTER
DUTCHESS
ORANGE
PUTNAM
WESTCHESTER
ROCK.
SUFFOLK
NASSAU

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 62 |
| 2. | Number of Counties with oil and/or gas production | | | 15 |
| 3. | Total land area of State (acres) | | | 30,611,840 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 720,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 4,350,000 |
| 6. | Percent of total land area productive or leased | | | 16.6% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 830,118,397 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 14.65 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 8,615,000 |
| 10. | Value of natural gas liquids produced in 1978 | | | Not Applicable |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 13,356,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 21,971,000 |
| 13. | Percent petroleum value to total all minerals | | | 5.2% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ........ Cement | | | |
| | 2nd ........ Stone | | | |
| | 3rd ........ Salt | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 2,086 |
| 16. | First year of production of crude oil | | | 1865 |
| | natural gas | | | 1885 |
| 17. | First recorded production of crude oil (barrels) | 1865 | | 100,000 |
| | natural gas (Mcf) | 1885 | | 3,136,000 |
| 18. | State and local severance and production taxes paid in 1978 | | | 0 |

## PRODUCTION AND RESERVES

| | | | |
|---|---|---|---|
| 19. | Year of largest production (crude oil) | | 1882 |
| 20. | Crude oil produced in year of largest production (barrels) | | 6,685,000 |
| 21. | Percent of crude oil produced by stripper wells | | 98.7% |
| 22. | Number of producing wells at end of 1978: Crude Oil | 4,900 | |
| | Gas & Condensate | 1,900 | |
| | Total | 6,800 | |
| 23. | Average daily production of crude oil per well at end of 1978 | | 0.4 |
| 24. | Percent of wells pumping or on artificial lift | | 100.0% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 2,397 | 2,342 | 2,258 | 1,611 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 750 | 0 | 750 | 28,755 |
| Estimated Production | 853 | 0 | 853 | 13,347 |
| Net Change in Reserves | −103 | 0 | −103 | 15,408 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 228,490 | 0 | 228,490 | 827,689 |
| Total Production | 219,494 | 0 | 219,494 | 564,978 |
| Proved Reserves Dec. 31, 1978 | 8,996 | 0 | 8,996 | 262,711 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 13,500 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Gas* | 5,425 |

30. Wells and footage drilled in 1978:

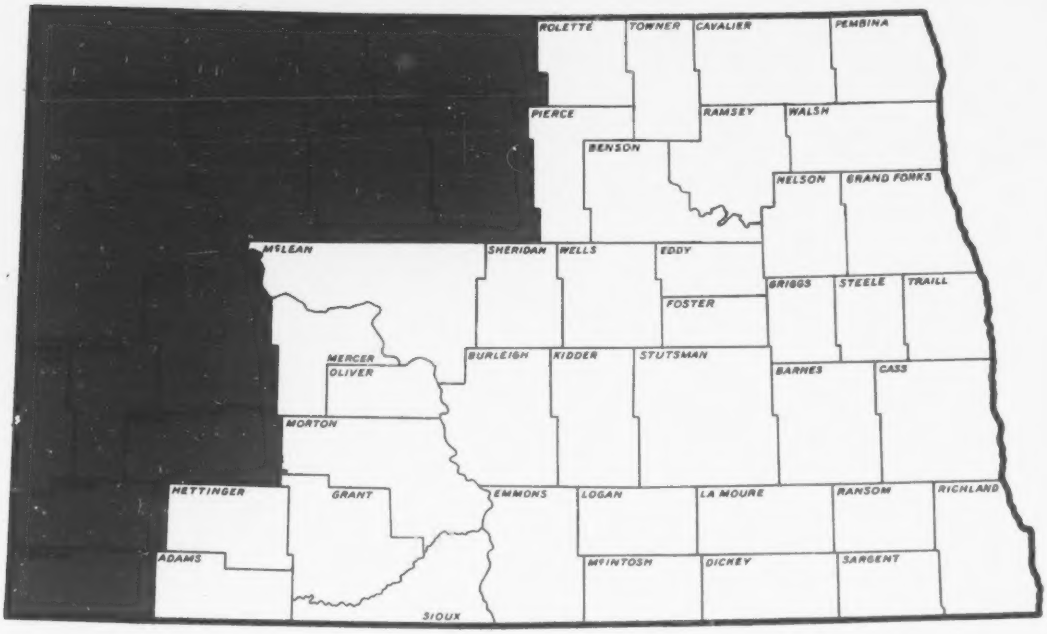
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 0 | 0 | 161 | 37.0 | 161 | 33.4 |
| Gas Wells | 29 | 61.7 | 195 | 44.8 | 224 | 46.5 |
| Dry Wells | 18 | 38.3 | 8 | 1.9 | 26 | 5.4 |
| Service Wells | 0 | 0 | 71 | 16.3 | 71 | 14.7 |
| Total Wells | 47 | 100.0 | 435 | 100.0 | 482 | 100.0 |
| Avg. Depth per Well | 3,455 | | 2,150 | | 2,278 | |
| Total Footage | 162,406 | | 935,384 | | 1,097,790 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 8,647 | 78.0 | 1,526 | 13.8 | 918 | 8.2 | 11,091 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................ 7

# The Oil Producing Industry in NORTH DAKOTA


ROLETTE
TOWNER
CAVALIER
PEMBINA
PIERCE
RAMSEY
WALSH
BENSON
NELSON
GRAND FORKS
McLEAN
SHERIDAN
WELLS
EDDY
GRIGGS
STEELE
TRAILL
FOSTER
MERCER
OLIVER
BURLEIGH
KIDDER
STUTSMAN
BARNES
CASS
MORTON
HETTINGER
GRANT
EMMONS
LOGAN
LA MOURE
RANSOM
RICHLAND
ADAMS
McINTOSH
DICKEY
SARGENT
SIOUX

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 53 |
| 2. | Number of Counties with oil and/or gas production | | | 15 |
| 3. | Total land area of State (acres) | | | 44,334,720 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 373,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 22,280,000 |
| 6. | Percent of total land area productive or leased | | | 51.1% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 1,943,457,107 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 8.60 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 213,100,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 12,900,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 13,140,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 239,140,000 |
| 13. | Percent petroleum value to total all minerals | | | 76.0% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Crude Petroleum | | | |
| | 2nd ... Coal | | | |
| | 3rd ... Natural Gas Liquids | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 3,050 |
| 16. | First year of production of crude oil | | | 1951 |
| | natural gas | | | 1907 |
| 17. | First recorded production of crude oil (barrels) | 1951 | | 25,000 |
| | natural gas (Mcf) | 1928 | | 200 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 11,100,302 |

## PRODUCTION AND RESERVES

| | | | |
|---|---|---|---|
| 19. | Year of largest production (crude oil) | | 1966 |
| 20. | Crude oil produced in year of largest production (barrels) | | 27,126,000 |
| 21. | Percent of crude oil produced by stripper wells | | 4.9% |
| 22. | Number of producing wells at end of 1978: Crude Oil | 1,732 | |
| | Gas & Condensate | 23 | |
| | Total | 1,755 | |
| 23. | Average daily production of crude oil per well at end of 1978 | | 37.2 |
| 24. | Percent of wells pumping or on artificial lift | | 79.3% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 56,033 | 59,358 | 63,762 | 67,888 |
| Natural Gas Liquids | 4,411* | 4,134* | 4,293 | 4,447 |
| Total Petroleum Liquids | 60,444 | 63,492 | 68,055 | 72,335 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 35,987 | 8,405 | 44,392 | 49,246 |
| Estimated Production | 24,965 | 1,671 | 26,636 | 29,827 |
| Net Change in Reserves | 11,022 | 6,734 | 17,756 | 19,419 |

27. Production and new reserves found all time to December 31, 1978:

| | | | | |
|---|---|---|---|---|
| Total Reserves Found | 686,123 | 103,181 | 789,304 | 1,244,952 |
| Total Production | 524,910 | 49,055 | 573,965 | 833,467 |
| Proved Reserves Dec. 31, 1978 | 161,213 | 54,126 | 215,339 | 411,485 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 15,380 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Gas* | 14,200 |

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 32 | 19.6 | 129 | 78.7 | 161 | 49.2 |
| Gas Wells | 1 | 0.6 | 0 | 0 | 1 | 0.3 |
| Dry Wells | 130 | 79.8 | 35 | 21.3 | 165 | 50.5 |
| Service Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Wells | 163 | 100.0 | 164 | 100.0 | 327 | 100.0 |
| Avg. Depth per Well | 8,240 | | 8,558 | | 8,400 | |
| Total Footage | 1,343,164 | | 1,403,494 | | 2,746,658 | |

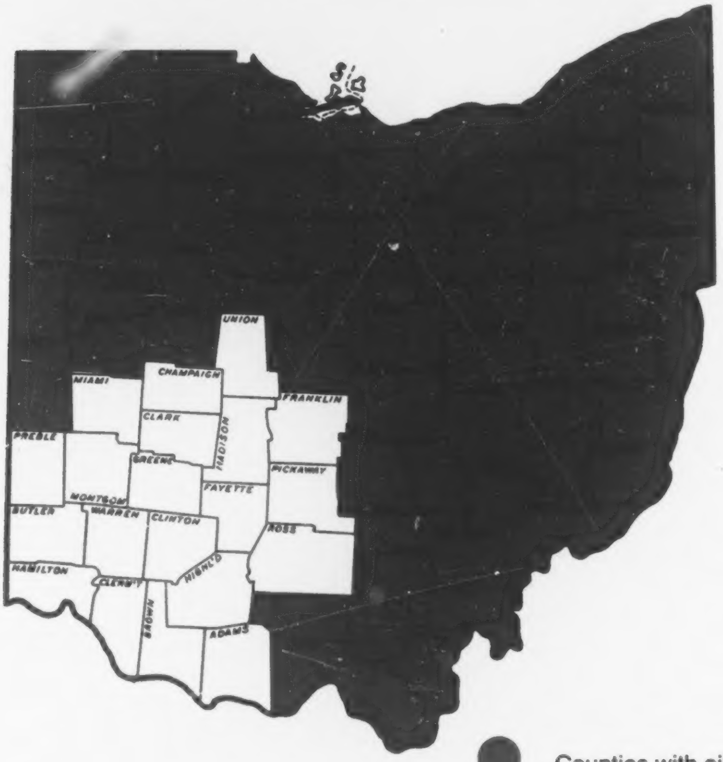
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 3,038 | 47.9 | 5 | 0.1 | 3,293 | 52.0 | 6,336 | 100.0 |

| | | |
|---|---|---|
| 32. | Rotary Drilling Rigs Active in 1978 (average) | 39 |

*Estimated.

## The Oil Producing Industry in OHIO


UNION
MIAMI
CHAMPAIGN
FRANKLIN
CLARK
MADISON
PREBLE
GREENE
PICKAWAY
MONTGOM
FAYETTE
BUTLER
WARREN
CLINTON
ROSS
HAMILTON
HIGHL'D
CLERM'T
BROWN
ADAMS

● Counties with oil and/or gas production

### EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 88 |
| 2. | Number of Counties with oil and/or gas production | | | 68 |
| 3. | Total land area of State (acres) | | | 26,224,000 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 2,642,885 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 12,545,300 |
| 6. | Percent of total land area productive or leased | | | 57.9% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 1,969,907,914 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 13.85 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 179,715,000 |
| 10. | Value of natural gas liquids produced in 1978 | | | Not Applicable |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 149,100,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 328,815,000 |
| 13. | Percent petroleum value to total all minerals | | | 17.1% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Coal | | | |
| | 2nd ... Natural Gas | | | |
| | 3rd ... Crude Petroleum | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 7,787 |
| 16. | First year of production of crude oil | | | 1860 |
| | natural gas | | | 1884 |
| 17. | First recorded production of crude oil (barrels) | 1876 | | 32,000 |
| | natural gas (Mcf) | 1884 | | 800 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 1,246,462 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................. 1896

20. Crude oil produced in year of largest production (barrels) .................................. 23,941,000

21. Percent of crude oil produced by stripper wells .................................. 70.0%

22. Number of producing wells at end of 1978:

| | |
|---|---|
| Crude Oil | 18,097 |
| Gas & Condensate | 13,643 |
| Total | 31,740 |

23. Average daily production of crude oil per well at end of 1978 .................................. 1.7

24. Percent of wells pumping or on artificial lift .................................. 98.0%

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 26,241 | 27,306 | 28,381 | 35,551 |
| Natural Gas Liquids | 0 | 0 | 0 | 0 |
| Total Petroleum Liquids | 26,241 | 27,306 | 28,381 | 35,551 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 13,200 | 0 | 13,200 | 216,287 |
| Estimated Production | 11,154 | 0 | 11,154 | 115,239 |
| Net Change in Reserves | 2,046 | 0 | 2,046 | 101,048 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 974,230 | 7,530 | 981,760 | 7,058,032 |
| Total Production | 843,036 | 7,530 | 850,566 | 5,497,554 |
| Proved Reserves Dec. 31, 1978 | 131,194 | 0 | 131,194 | 1,560,478 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ................. *Dry Hole* 11,442

29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas* 8,488

30. Wells and footage drilled in 1978:

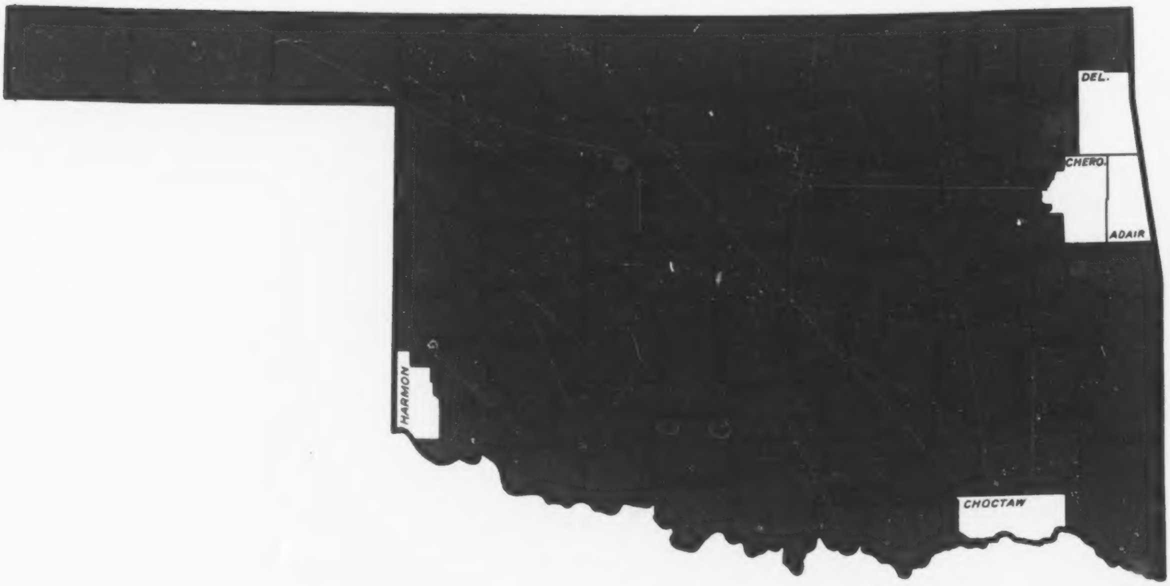
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 7 | 17.5 | 1,012 | 39.4 | 1,019 | 39.1 |
| Gas Wells | 21 | 52.5 | 1,369 | 53.4 | 1,390 | 53.3 |
| Dry Wells | 12 | 30.0 | 183 | 7.1 | 195 | 7.5 |
| Service Wells | 0 | 0 | 2 | 0.1 | 2 | 0.1 |
| Total Wells | 40 | 100.0 | 2,566 | 100.0 | 2,606 | 100.0 |
| Avg. Depth per Well | 3,944 | | 3,898 | | 3,899 | |
| Total Footage | 157,752 | | 10,003,536 | | 10,161,288 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 61,024 | 47.0 | 33,665 | 26.0 | 35,002 | 27.0 | 129,691 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .................................. 47

# The Oil Producing Industry in OKLAHOMA



● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | |
|---|---|---|---|
| 1. | Number of Counties in State | | 77 |
| 2. | Number of Counties with oil and/or gas production | | 72 |
| 3. | Total land area of State (acres) | | 44,020,480 |
| 4. | Area proved productive of oil and/or gas (acres) | | 3,328,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | 11,632,200 |
| 6. | Percent of total land area productive or leased | | 34.0% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | $ | 29,492,011,419 |
| 8. | Average field price of crude oil per barrel in 1978 | $ | 10.60 |
| 9. | Value at wells of crude oil produced in 1978 | $ | 1,594,825,000 |
| 10. | Value of natural gas liquids produced in 1978 | $ | 333,200,000 |
| 11. | Value at wells of natural gas produced in 1978 | $ | 1,613,960,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | $ | 3,541,985,000 |
| 13. | Percent petroleum value to total all minerals | | 92.3% |
| 14. | Principal mineral products in order of value: | | |
| | 1st ... Crude Petroleum | | |
| | 2nd ... Natural Gas | | |
| | 3rd ... Natural Gas Liquids | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | 50,993 |
| 16. | First year of production of crude oil | | 1891 |
| | natural gas | | 1902 |
| 17. | First recorded production of crude oil (barrels) | 1891 | 30 |
| | natural gas (Mcf) | 1906 | 3,520 |
| 18. | State and local severance and production taxes paid in 1978 | $ | 233,100,228 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................... 1927
20. Crude oil produced in year of largest production (barrels) .................... 277,775,000
21. Percent of crude oil produced by stripper wells .................................... 47.6%
22. Number of producing wells at end of 1978:

| | |
|---|---|
| Crude Oil | 74,870 |
| Gas & Condensate | 12,525 |
| Total | 87,395 |

23. Average daily production of crude oil per well at end of 1978 .................. 5.5
24. Percent of wells pumping or on artificial lift .................................... 94.3%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 446,912 | 441,055 | 428,444 | 412,205 |
| Natural Gas Liquids | 110,891 | 116,159 | 114,775 | 121,559 |
| Total Petroleum Liquids | 557,803 | 557,214 | 543,219 | 533,764 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 87,365 | 40,436 | 127,80 | 1,397,849 |
| Estimated Production | 135,326 | 42,000 | 177,326 | 1,646,900 |
| Net Change in Reserves | −47,961 | −1,564 | −49,525 | −249,051 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 12,792,830 | 1,993,770 | 14,786,600 | 60,661,317 |
| Total Production | 11,719,361 | 1,725,100 | 13,444,461 | 49,198,026 |
| Proved Reserves Dec. 31, 1978 | 11,073,469 | 268,670 | 1,342,139 | 11,463,291 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ................. *Dry Hole* 31.441
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas* 24,548
30. Wells and footage drilled in 1978:

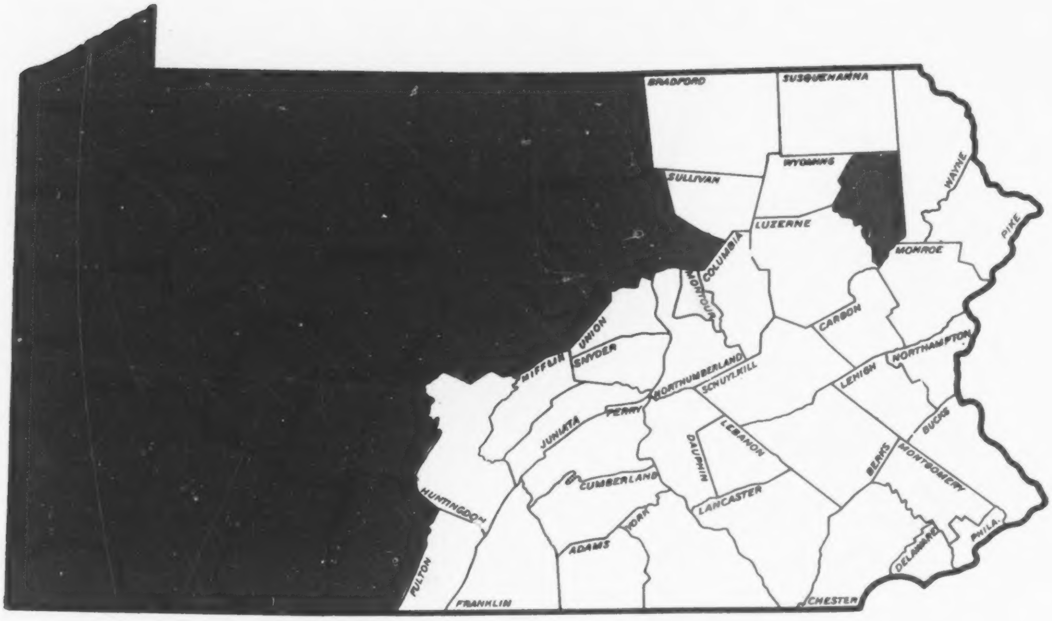
| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 64 | 12.8 | 2,435 | 45.4 | 2,499 | 42.7 |
| Gas Wells | 89 | 17.7 | 1,418 | 26.5 | 1,507 | 25.7 |
| Dry Wells | 349 | 69.5 | 1,467 | 27.4 | 1,816 | 31.0 |
| Service Wells | 0 | 0 | 37 | 0.7 | 37 | 0.6 |
| Total Wells | 502 | 100.0 | 5,357 | 100.0 | 5,859 | 100.0 |
| Avg. Depth per Well | 6,815 | | 4,947 | | 5,107 | |
| Total Footage | 3,421,066 | | 26,499,487 | | 29,920,553 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 195,267 | 61.5 | 30,204 | 9.5 | 91,979 | 29.0 | 317,450 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .............................. 258

# The Oil Producing Industry in PENNSYLVANIA


BRADFORD
SUSQUEHANNA
SULLIVAN
WYOMING
WAYNE
LUZERNE
PIKE
MONROE
COLUMBIA
MONTOUR
CARBON
UNION
MIFFLIN
SNYDER
NORTHUMBERLAND
SCHUYLKILL
NORTHAMPTON
LEHIGH
JUNIATA
PERRY
LEBANON
DAUPHIN
BUCKS
BERKS
MONTGOMERY
CUMBERLAND
HUNTINGDON
LANCASTER
YORK
PHILA.
DELAWARE
ADAMS
FULTON
FRANKLIN
CHESTER

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | |
|---|---|---|---|
| 1. | Number of Counties in State | | 67 |
| 2. | Number of Counties with oil and/or gas production | | 32 |
| 3. | Total land area of State (acres) | | 28,778,240 |
| 4. | Area proved productive of oil and/or gas (acres) | | 2,498,360 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | 13,635,000 |
| 6. | Percent of total land area productive or leased | | 56.1% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | $ | 2,988,233,500 |
| 8. | Average field price of crude oil per barrel in 1978 | $ | 14.75 |
| 9. | Value at wells of crude oil produced in 1978 | $ | 45,800,000 |
| 10. | Value of natural gas liquids produced in 1978 | $ | 235,000 |
| 11. | Value at wells of natural gas produced in 1978 | $ | 82,625,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | $ | 128,660,000 |
| 13. | Percent petroleum value to total all minerals | | 3.7% |
| 14. | Principal mineral products in order of value: | | |
| | 1st ........ Coal | | |
| | 2nd ........ Cement | | |
| | 3rd ........ Stone | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | 3,495 |
| 16. | First year of production of crude oil | | 1859 |
| | natural gas | | 1881 |
| 17. | First recorded production of crude oil (barrels) | 1859 | 2,000 |
| | natural gas (Mcf) | 1882 | 600,000 |
| 18. | State and local severance and production taxes paid in 1978 | | 0 |

## PRODUCTION AND RESERVES

| | | | | |
|---|---|---|---|---|
| 19. | Year of largest production (crude oil) | | | 1891 |
| 20. | Crude oil produced in year of largest production (barrels) | | | 31,424,000 |
| 21. | Percent of crude oil produced by stripper wells | | | 98.0% |
| 22. | Number of producing wells at end of 1978: | Crude Oil | 28,400 | |
| | | Gas & Condensate | 17,900 | |
| | | Total | 46,300 | |
| 23. | Average daily production of crude oil per well at end of 1978 | | | 0.3 |
| 24. | Percent of wells pumping or on artificial lift | | | 99.8% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 8,942 | 8,249 | 7,438 | 8,507 |
| Natural Gas Liquids | 137* | 171* | 104 | 137 |
| Total Petroleum Liquids | 9,079 | 8,420 | 7,542 | 8,644 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 1,642 | 0 | 1,642 | 306,347 |
| Estimated Production | 2,820 | 67 | 2,887 | 97,763 |
| Net Change in Reserves | −1,178 | −67 | −1,245 | 208,584 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 1,343,266 | 15,902 | 1,359,168 | 11,297,005 |
| Total Production | 1,295,110 | 15,579 | 1,310,689 | 9,203,489 |
| Proved Reserves Dec. 31, 1978 | 48,156 | 323 | 48,479 | 2,093,516 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 21,460 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Gas* | 11,458 |

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 6 | 6.2 | 565 | 34.2 | 571 | 32.7 |
| Gas Wells | 69 | 71.9 | 1,037 | 62.8 | 1,106 | 63.3 |
| Dry Wells | 21 | 21.9 | 29 | 1.7 | 50 | 2.8 |
| Service Wells | 0 | 0 | 21 | 1.3 | 21 | 1.2 |
| Total Wells | 96 | 100.0 | 1,652 | 100.0 | 1,748 | 100.0 |
| Avg. Depth per Well | 3,868 | | 2,549 | | 2,621 | |
| Total Footage | 371,312 | | 4,210,405 | | 4,581,717 | |

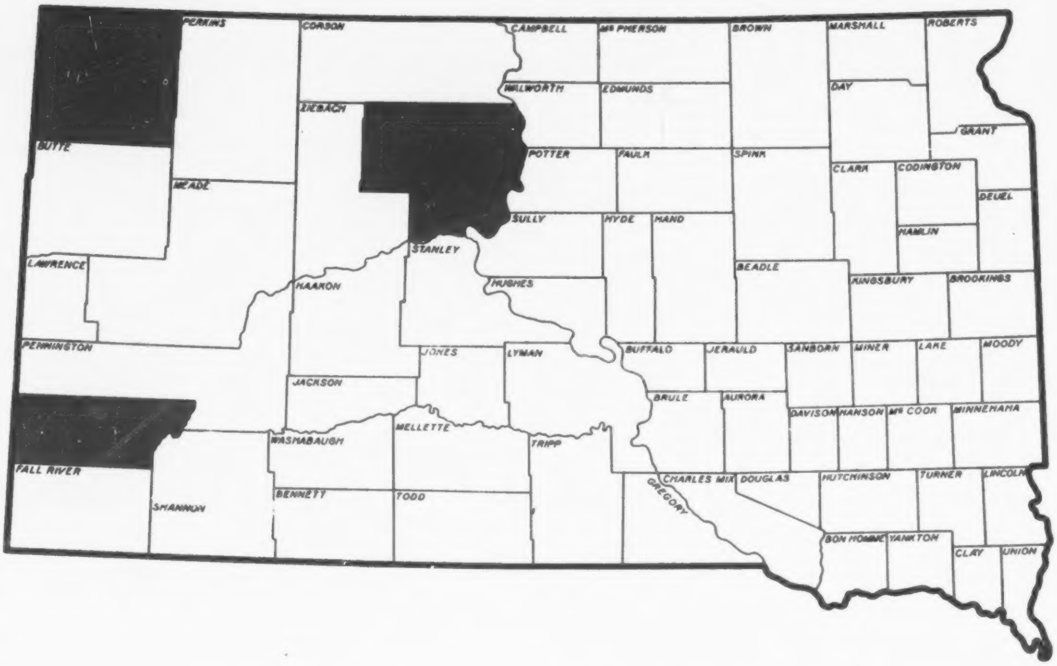
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 240,424 | 80.5 | 20,072 | 6.7 | 38,070 | 12.8 | 298,566 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................ 25

*Estimated.

# The Oil Producing Industry in SOUTH DAKOTA


PERKINS
CORSON
CAMPBELL
McPHERSON
BROWN
MARSHALL
ROBERTS
WALWORTH
EDMUNDS
DAY
ZIEBACH
GRANT
BUTTE
POTTER
FAULK
SPINK
CLARK
CODINGTON
MEADE
DEUEL
SULLY
HYDE
HAND
HAMLIN
STANLEY
LAWRENCE
BEADLE
KINGSBURY
BROOKINGS
HAAKON
HUGHES
PENNINGTON
JONES
LYMAN
BUFFALO
JERAULD
SANBORN
MINER
LAKE
MOODY
JACKSON
BRULE
AURORA
DAVISON
HANSON
McCOOK
MINNEHAHA
WASHABAUGH
MELLETTE
TRIPP
FALL RIVER
CHARLES MIX
DOUGLAS
HUTCHINSON
TURNER
LINCOLN
BENNETT
TODD
GREGORY
SHANNON
BON HOMME
YANKTON
CLAY
UNION

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 67 |
| 2. | Number of Counties with oil and/or gas production | | | 3 |
| 3. | Total land area of State (acres) | | | 48,611,200 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 11,700 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 6,430,000 |
| 6. | Percent of total land area productive or leased | | | 13.3% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 7,732,761,000 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 12.75 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 11,005,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 750,000 |
| 11. | Value at wells of natural gas produced in 1978 | | | Not Applicable |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 11,755,000 |
| 13. | Percent petroleum value to total all minerals | | | 7.2% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ........ Gold | | | |
| | 2nd ........ Cement | | | |
| | 3rd ........ Stone | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 19[illegible] |
| 16. | First year of production of crude oil | | | 1953 |
| | natural gas | | | 1899 |
| 17. | First recorded production of crude oil (barrels) | 1954 | | 37,000 |
| | natural gas (Mcf) | 1906 | | 22,900 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 73,658 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................... 1978
20. Crude oil produced in year of largest production (barrels) ...................... 863,000
21. Percent of crude oil produced by stripper wells ................................ 2.3%
22. Number of producing wells at end of 1978: Crude Oil ........................ 80*
23. Average daily production of crude oil per well at end of 1978 .................. 29.6
24. Percent of wells pumping or on artificial lift .................................. 100.0%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 1,293 | 1,221 | 1,732 | 2,364 |
| Natural Gas Liquids | 233* | 216* | 160* | 247* |
| Total Petroleum Liquids | 1,526 | 1,437 | 1,892 | 2,610 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 1,262 | 0 | 1,262 | 0 |
| Estimated Production | 815 | 0 | 815 | 0 |
| Net Change in Reserves | 447 | 0 | 447 | 0 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 8,883 | 0 | 8,883 | 500 |
| Total Production | 6,145 | 0 | 6,145 | 300 |
| Proved Reserves Dec. 31, 1978 | 2,738 | 0 | 2,738 | 200 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ................. *Dry Hole* 9,771
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Oil* 9,150
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 4 | 23.5 | 21 | 75.0 | 25 | 55.6 |
| Gas Wells | 0 | 0 | 1 | 3.6 | 1 | 2.2 |
| Dry Wells | 13 | 76.5 | 6 | 21.4 | 19 | 42.2 |
| Service Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Wells | 17 | 100.0 | 28 | 100.0 | 45 | 100.0 |
| Avg. Depth per Well | 6,253 | | 8,325 | | 7,542 | |
| Total Footage | 106,306 | | 233,096 | | 339,402 | |

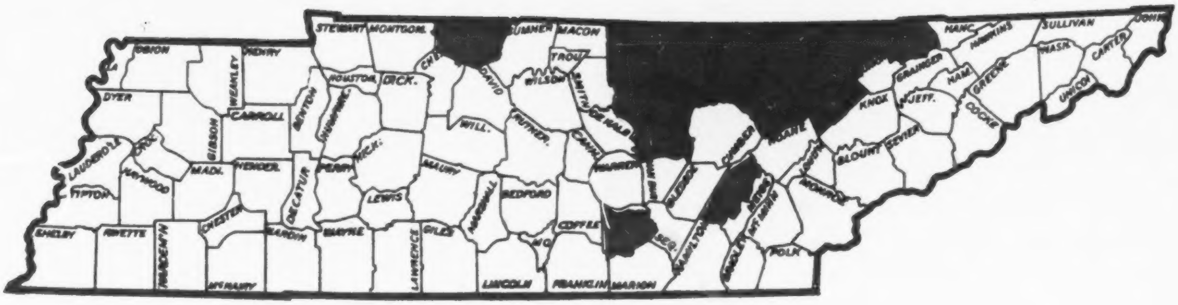
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 100 | 14.0 | 7 | 1.0 | 606 | 85.0 | 173 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................ 2

*Estimated.

# The Oil Producing Industry in TENNESSEE



OBION
HENRY
STEWART
MONTGOM.
SUMNER
MACON
HANC.
HAWKINS
SULLIVAN
DYER
WEAKLEY
HOUSTON
DICK.
WILSON
DAVID.
GRAINGER
WASH.
CARTER
UNICOI
CARROLL
GIBSON
BENTON
WILL.
RUTHER.
KNOX
JEFF.
COCKE
GREENE
LAUDERDALE
HAYWOOD
MADI.
HENDER.
PERRY
HICK.
MAURY
ROANE
BLOUNT
SEVIER
TIPTON
DECATUR
LEWIS
MARSHALL
BEDFORD
WARREN
BLEDSOE
MONROE
SHELBY
FAYETTE
HARDEMAN
CHESTER
HARDIN
WAYNE
LAWRENCE
GILES
COFFEE
LINCOLN
FRANKLIN
MARION
McNAIRY
HAMILTON
BRADLEY
POLK

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 95 |
| 2. | Number of Counties with oil and/or gas production | | | 15 |
| 3. | Total land area of State (acres) | | | 26,449,920 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 8,335 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 3,325,000 |
| 6. | Percent of total land area productive or leased | | | 12.6% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 47,084,870 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 14.25 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 8,610,000 |
| 10. | Value of natural gas liquids produced in 1978 | | | Not Applicable |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 235,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 8,845,000 |
| 13. | Percent petroleum value to total all minerals | | | 2.0% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Coal | | | |
| | 2nd ... Stone | | | |
| | 3rd ... Zinc | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 323 |
| 16. | First year of production of crude oil | | | 1860 |
| | natural gas | | | 1889 |
| 17. | First recorded production of crude oil (barrels) | 1916 | | 1,000 |
| | natural gas (Mcf) | 1905 | | 1 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 31,765 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .......... 1977

20. Crude oil produced in year of largest production (barrels) .......... 820,000

21. Percent of crude oil produced by stripper wells .......... 23.7%

22. Number of producing wells at end of 1978:

| | |
|---|---|
| Crude Oil | 279 |
| Gas & Condensate | 60 |
| Total | 339 |

23. Average daily production of crude oil per well at end of 1978 .......... 5.4

24. Percent of wells pumping or on artificial lift .......... 57.3%

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 1,885* | 1,634 | 2,247 | 1,655 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 546 | 0 | 546 | 0 |
| Estimated Production | 593 | 0 | 593 | 0 |
| Net Change in Reserves | −47 | 0 | −47 | 0 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 7,913 | 0 | 7,913 | 14,609 |
| Total Production | 5,424 | 0 | 5,424 | 3,409 |
| Proved Reserves Dec. 31, 1978 | 2,489 | 0 | 2,489 | 11,200 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .......... *Dry Hole* 10,748

29. Deepest producing well drilled to January 1, 1979 (feet) .......... *Gas* 3,059

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 13 | 8.6 | 27 | 38.0 | 40 | 18.0 |
| Gas Wells | 47 | 31.1 | 25 | 35.2 | 72 | 32.4 |
| Dry Wells | 91 | 60.3 | 19 | 26.8 | 110 | 49.6 |
| Service Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Wells | 151 | 100.0 | 71 | 100.0 | 222 | 100.0 |
| Avg. Depth per Well | 1,686 | | 1,580 | | 1,652 | |
| Total Footage | 254,661 | | 112,157 | | 366,818 | |

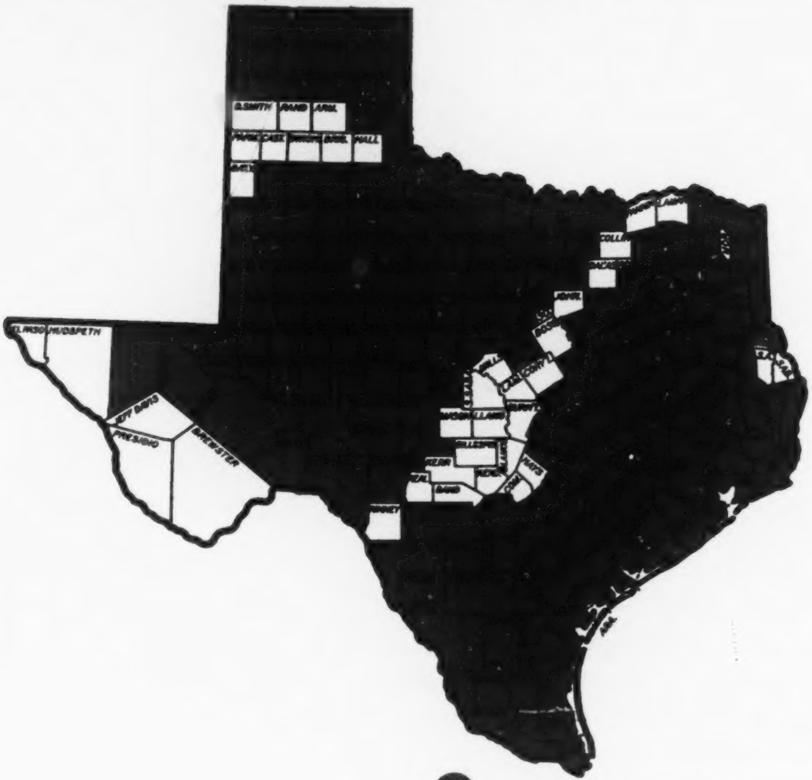
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 730 | 24.0 | 379 | 12.4 | 1,939 | 63.6 | 3,048 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .......... 0

*Estimated.

# The Oil Producing Industry in TEXAS



● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 254 |
| 2. | Number of Counties with oil and/or gas production | | | 213 |
| 3. | Total land area of State (acres) | | | 167,765,760 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 9,911,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 39,217,800 |
| 6. | Percent of total land area productive or leased | | | 29.3% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 139,043,587,005 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 9.40 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 10,093,955,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 2,155,280,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 6,613,666,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 18,862,901,000 |
| 13. | Percent petroleum value to total all minerals | | | 94.1% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Crude Petroleum | | | |
| | 2nd ... Natural Gas | | | |
| | 3rd ... Natural Gas Liquids | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 175,702 |
| 16. | First year of production of crude oil | | | 1889 |
| | natural gas | | | 1889 |
| 17. | First recorded production of crude oil (barrels) | 1890 | | 48 |
| | natural gas (Mcf) | 1906 | | 1,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 955,050,627 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .......... 1972
20. Crude oil produced in year of largest production (barrels) .......... 1,301,154,000
21. Percent of crude oil produced by stripper wells .......... 11.2%
22. Number of producing wells at end of 1978: Crude Oil .......... 165,817
Gas & Condensate .......... 33,324
Total .......... 199,141
23. Average daily production of crude oil per well at end of 1978 .......... 18.4
24. Percent of wells pumping or on artificial lift .......... 90.3%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 3,347,751 | 3,250,063 | 3,117,479 | 2,941,986 |
| Natural Gas Liquids | 798,548 | 784,404 | 777,458 | 728,208 |
| Total Petroleum Liquids | 4,146,299 | 4,034,467 | 3,894,937 | 3,670,194 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 267,491 | 158,736 | 426,227 | −1,028,884‡ |
| Estimated Production | 1,044,936 | 289,239 | 1,334,175 | 6,528,717 |
| Net Change in Reserves | −777,445 | −130,503 | −907,948 | −755,601 |
| **27.** Production and new reserves found all time to December 31, 1978: | | | | |
| Total Reserves Found | 51,598,804 | 11,105,337 | 62,704,141 | 272,003,136 |
| Total Production | 43,908,813 | 8,837,053 | 52,745,866 | 217,402,901 |
| Proved Reserves Dec. 31, 1978 | 7,689,991 | 2,268,284 | 9,958,275 | 54,600,235 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .......... *Dry Hole* 28,500
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas* 26,518
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 396 | 10.2 | 5,690 | 51.0 | 6,086 | 40.5 |
| Gas Wells | 780 | 20.1 | 2,512 | 22.5 | 3,292 | 21.9 |
| Dry Wells | 2,708 | 69.7 | 2,510 | 22.5 | 5,218 | 34.7 |
| Service Wells | 0 | 0 | 441 | 4.0 | 441 | 2.9 |
| Total Wells | 3,884 | 100.0 | 11,153 | 100.0 | 15,037 | 100.0 |
| Avg. Depth per Well | 6,435 | | 5,019 | | 5,385 | |
| Total Footage | 24,992,910 | | 55,978,472 | | 80,971,382 | |

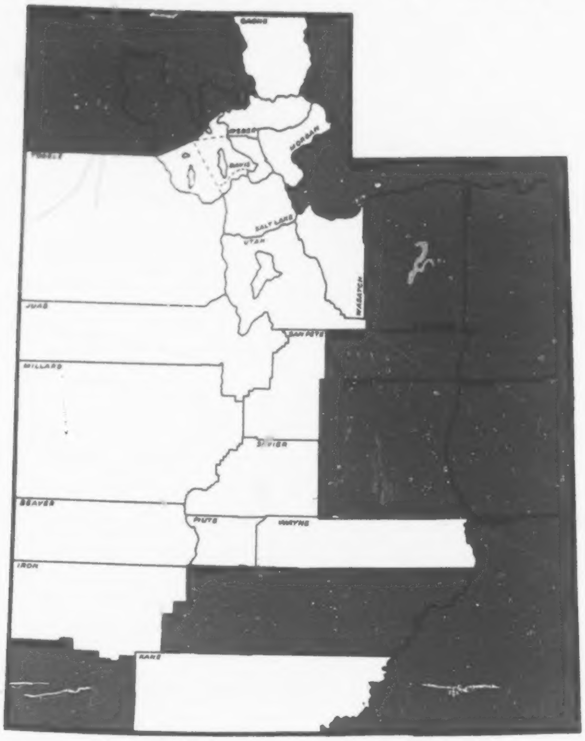
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 401,680 | 59.6 | 48,352 | 7.2 | 223,424 | 33.2 | 673,456 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .......... 855

‡Downward Revision of Previous Estimate.

# The Oil Producing Industry in UTAH



● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 29 |
| 2. | Number of Counties with oil and/or gas production | | | 12 |
| 3. | Total land area of State (acres) | | | 52,541,440 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 340,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 27,790,000 |
| 6. | Percent of total land area productive or leased | | | 53.5% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 2,819,081,603 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 9.90 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 297,760,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 25,150,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 40,952,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 363,862,000 |
| 13. | Percent petroleum value to total all minerals | | | 34.1% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ............ Crude Petroleum | | | |
| | 2nd ............ Copper | | | |
| | 3rd ............ Coal | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 3,367 |
| 16. | First year of production of crude oil | | | 1907 |
| | natural gas | | | 1886 |
| 17. | First recorded production of crude oil (barrels) | 1924 | | 3,000 |
| | natural gas (Mcf) | 1927 | | 927 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 6,643,439 |

## PRODUCTION AND RESERVES

| | | |
|---|---|---|
| 19. | Year of largest production (crude oil) | 1975 |
| 20. | Crude oil produced in year of largest production (barrels) | 42,301,000 |
| 21. | Percent of crude oil produced by stripper wells | 0.4% |
| 22. | Number of producing wells at end of 1978: Crude Oil | 1,291 |
| | Gas & Condensate | 171 |
| | Total | 1,462 |
| 23. | Average daily production of crude oil per well at end of 1978 | 67.6 |
| 24. | Percent of wells pumping or on artificial lift | 57.2% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 115,893 | 93,727 | 90,721 | 82,403 |
| Natural Gas Liquids | 7,110* | 7,131* | 8,510* | 7,267 |
| Total Petroleum Liquids | 123,003 | 100,858 | 99,231 | 89,670 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 4,705 | 292 | 4,997 | 9,566 |
| Estimated Production | 31,481 | 2,895 | 34,376 | 59,818 |
| Net Change in Reserves | −26,776 | −2,603 | −29,379 | −50,252 |
| **27.** Production and new reserves found all time to December 31, 1978: | | | | |
| Total Reserves Found | 803,824 | 80,593 | 884,417 | 2,017,860 |
| Total Production | 648,453 | 48,879 | 697,332 | 1,319,205 |
| Proved Reserves Dec. 31, 1978 | 155,371 | 31,714 | 187,085 | 698,655 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 21,786 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Oil* | 17,732 |

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 8 | 10.1 | 74 | 37.4 | 82 | 29.6 |
| Gas Wells | 13 | 16.5 | 78 | 39.4 | 91 | 32.8 |
| Dry Wells | 58 | 73.4 | 30 | 15.1 | 88 | 31.8 |
| Service Wells | 0 | 0 | 16 | 8.1 | 16 | 5.8 |
| Total Wells | 79 | 100.0 | 198 | 100.0 | 277 | 100.0 |
| Avg. Depth per Well | 7,339 | | 5,630 | | 6,117 | |
| Total Footage | 579,790 | | 1,114,658 | | 1,694,448 | |

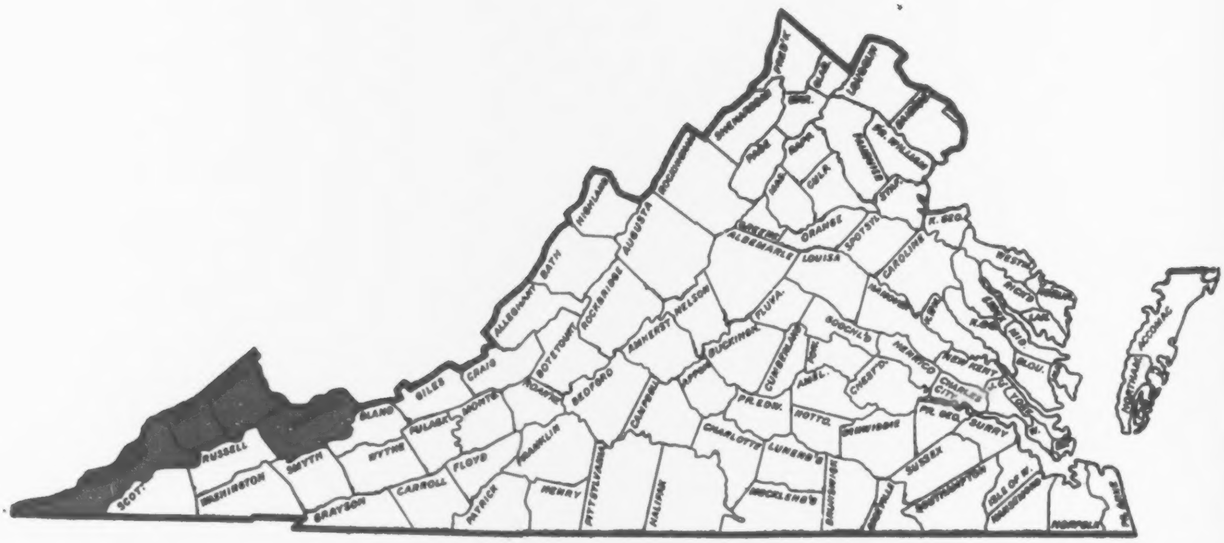
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 2,211 | 40.6 | 576 | 10.6 | 2,663 | 48.8 | 5,450 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) 32

*Estimated.

# The Oil Producing Industry in VIRGINIA


SCOT.
RUSSELL
WASHINGTON
SMYTH
WYTHE
GRAYSON
CARROLL
BLAND
GILES
PULASKI
MONTG.
FLOYD
PATRICK
FRANKLIN
HENRY
CRAIG
ROANOKE
BEDFORD
BOTETOURT
ALLEGHANY
BATH
HIGHLAND
ROCKBRIDGE
AUGUSTA
ROCKINGHAM
PITTSYLVANIA
CAMPBELL
AMHERST
NELSON
SHENANDOAH
FREDK.
CLAR.
LOUDOUN
PAGE
RAPK.
MAD.
CULA.
FAUQUIER
PR. WILLIAM
STAF.
GREENE
ORANGE
ALBEMARLE
LOUISA
SPOTSYL.
K. GEO.
CAROLINE
WESTM.
RICH'D
FLUVA.
BUCKING.
APPO.
GOOCHL'D
HANOVER
HENRICO
CUMBERLAND
AMEL.
CHEST'D.
NEW KENT
CHARLES CITY
GLOU.
MID.
ACCOMAC
NORTHAM.
PR. EDW.
NOTTO.
DINWIDDIE
PR. GEO.
SURRY
YORK
CHARLOTTE
LUNENB'G
SUSSEX
HALIFAX
MECKLENB'G
BRUNSWICK
SOUTHAMPTON
ISLE OF W.
NANSEMOND
NORFOLK

● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 96 |
| 2. | Number of Counties with oil and/or gas production | | | 5 |
| 3. | Total land area of State (acres) | | | 25,459,200 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 76,248 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 1,129,618 |
| 6. | Percent of total land area productive or leased | | | 4.7% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 1,058,400 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 12.50 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 13,000 |
| 10. | Value of natural gas liquids produced in 1978 | | | Not Applicable |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 11,103,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 11,116,000 |
| 13. | Percent petroleum value to total all minerals | | | 0.8% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st ... Coal | | | |
| | 2nd ... Stone | | | |
| | 3rd ... Lime | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 100 |
| 16. | First year of production of crude oil | | | 1943 |
| | natural gas | | | 1931 |
| 17. | First recorded production of crude oil (barrels) | 1943 | | 2,000 |
| | natural gas (Mcf) | 1949 | | 80,000 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 635,129 |

## PRODUCTION AND RESERVES

| | | | |
|---|---|---|---|
| 19. | Year of largest production (crude oil) | | 1947 |
| 20. | Crude oil produced in year of largest production (barrels) | | 61,000 |
| 21. | Percent of crude oil produced by stripper wells | | 87.1% |
| 22. | Number of producing wells at end of 1978: | Crude Oil | 5* |
| | | Gas & Condensate | 223 |
| | | Total | 228 |
| 23. | Average daily production of crude oil per well at end of 1978 | | 0.4 |
| 24. | Percent of wells pumping or on artificial lift | | 100.0% |

25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 6* | 8 | 5 | 0 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | (Thousand Barrels) | | | (Mil. Cu. Ft.) |
| New Reserves Found | 3 | 0 | 3 | 18,400 |
| Estimated Production | 3 | 0 | 3 | 8,377 |
| Net Change in Reserves | 0 | 0 | 0 | 10,023 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 288 | 0 | 288 | 178,120 |
| Total Production | 288 | 0 | 288 | 99,056 |
| Proved Reserves Dec. 31, 1978 | 0 | 0 | 0 | 79,064 |

## EXPLORATION AND DEVELOPMENT

| | | | |
|---|---|---|---|
| 28. | Deepest well drilled to January 1, 1979 (feet) | *Dry Hole* | 17,003 |
| 29. | Deepest producing well drilled to January 1, 1979 (feet) | *Gas* | 7,238 |

30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Gas Wells | 3 | 60.0 | 26 | 100.0 | 29 | 93.6 |
| Dry Wells | 2 | 40.0 | 0 | 0 | 2 | 6.4 |
| Service Wells | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Wells | 5 | 100.0 | 26 | 100.0 | 31 | 100.0 |
| Avg. Depth per Well | 4,753 | | 4,767 | | 4,765 | |
| Total Footage | 23,766 | | 123,954 | | 147,720 | |

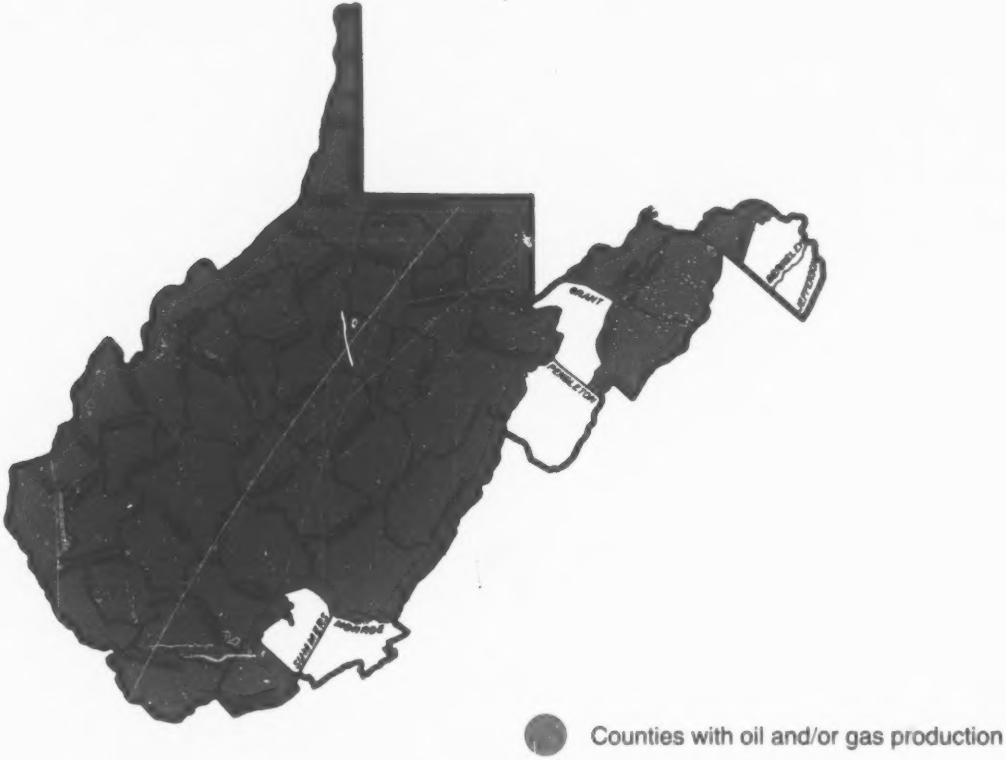
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 12 | 3.7 | 237 | 73.2 | 75 | 23.1 | 324 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) . . . . . . . . . . 1

*Estimated.

# The Oil Producing Industry in WEST VIRGINIA



## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 55 |
| 2. | Number of Counties with oil and/or gas production | | | 49 |
| 3. | Total land area of State (acres) | | | 15,404,800 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 6,956,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 6,016,000 |
| 6. | Percent of total land area productive or leased | | | 84.2% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 1,283,632,871 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 14.50 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 33,060,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 37,500,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 103,895,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 174,455,000 |
| 13. | Percent petroleum value to total all minerals | | | 4.9% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st | Coal | | |
| | 2nd | Natural Gas | | |
| | 3rd | Crude Petroleum | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 3,400 |
| 16. | First year of production of crude oil | | | 1860 |
| | natural gas | | | 1885 |
| 17. | First recorded production of crude oil (barrels) | 1876 | | 120,000 |
| | natural gas (Mcf) | 1885 | | 450,000 |
| 18. | State and local severance and production taxes paid in 1978 | | | 0 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .................................... 1900
20. Crude oil produced in year of largest production (barrels) ..................... 16,196,000
21. Percent of crude oil produced by stripper wells ............................ 94.7%
22. Number of producing wells at end of 1978: Crude Oil ......................... 14,100
    Gas & Condensate ................. 23,575
    Total ......................... 37,675
23. Average daily production of crude oil per well at end of 1978 .................. 0.4
24. Percent of wells pumping or on artificial lift .............................. 100.0%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 6,792 | 6,883 | 6,899 | 6,247 |
| Natural Gas Liquids | 17,343* | 20,859* | 15,350* | 21,559* |
| Total Petroleum Liquids | 24,135 | 27,742 | 22,249 | 27,806 |

26. Production and new reserves found in 1978:

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| **26.** New Reserves Found | 3,371 | 15,833 | 19,204 | 453,822 |
| Estimated Production | 2,382 | 5,227 | 7,609 | 146,541 |
| Net Change in Reserves | 989 | 10,606 | 11,595 | 307,281 |
| **27.** Total Reserves Found | 552,034 | 321,886 | 873,920 | 17,744,130 |
| Total Production | 522,359 | 225,607 | 747,966 | 15,060,994 |
| Proved Reserves Dec. 31, 1978 | 29,675 | 96,279 | 125,954 | 2,683,136 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) ................. *Dry Hole* 20,222
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas* 14,300
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 2 | 1.2 | 82 | 6.6 | 84 | 6.0 |
| Gas Wells | 113 | 68.5 | 1,035 | 83.5 | 1,148 | 81.8 |
| Dry Wells | 50 | 30.3 | 111 | 9.0 | 161 | 11.4 |
| Service Wells | 0 | 0 | 11 | 0.9 | 11 | 0.8 |
| Total Wells | 165 | 100.0 | 1,239 | 100.0 | 1,404 | 100.0 |
| Avg. Depth per Well | 3,748 | | 3,458 | | 3,492 | |
| Total Footage | 618,436 | | 4,284,738 | | 4,903,174 | |

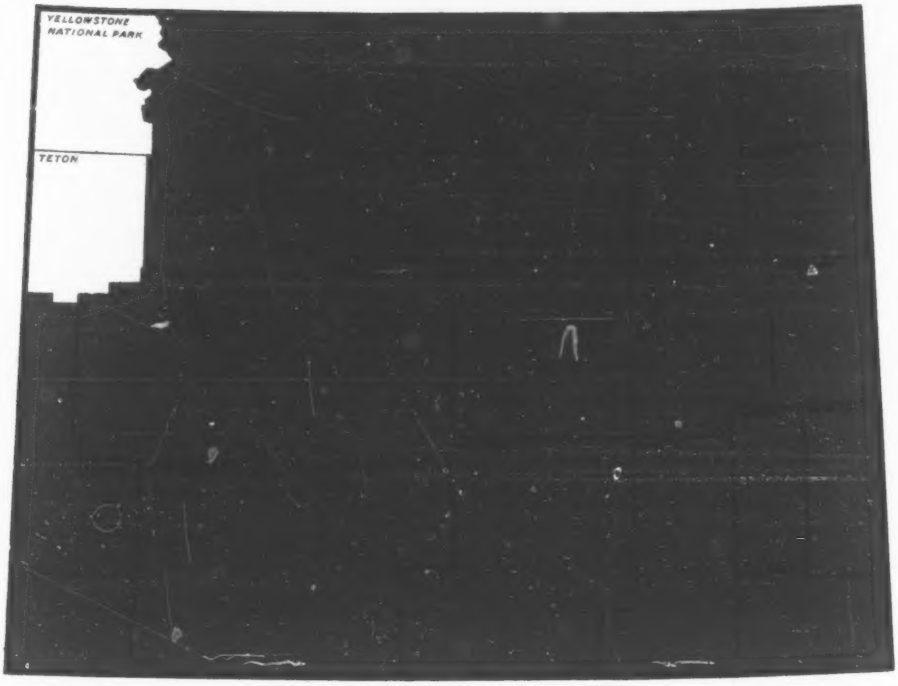
31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 46,305 | 46.2 | 35,187 | 35.1 | 18,751 | 18.7 | 100,243 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) ............................ 27

*Estimated.

# The Oil Producing Industry in WYOMING



● Counties with oil and/or gas production

## EXTENT AND ECONOMIC VALUE OF INDUSTRY

| | | | | |
|---|---|---|---|---|
| 1. | Number of Counties in State | | | 23 |
| 2. | Number of Counties with oil and/or gas production | | | 22 |
| 3. | Total land area of State (acres) | | | 62,209,920 |
| 4. | Area proved productive of oil and/or gas (acres) | | | 1,900,000 |
| 5. | Estimated non-productive area leased January 1, 1979 (acres) | | | 35,720,000 |
| 6. | Percent of total land area productive or leased | | | 60.5% |
| 7. | Value at wells of crude oil produced all time to January 1, 1979 | | $ | 13,498,009,811 |
| 8. | Average field price of crude oil per barrel in 1978 | | $ | 8.25 |
| 9. | Value at wells of crude oil produced in 1978 | | $ | 1,128,585,000 |
| 10. | Value of natural gas liquids produced in 1978 | | $ | 67,860,000 |
| 11. | Value at wells of natural gas produced in 1978 | | $ | 251,250,000 |
| 12. | Total value of crude oil, natural gas liquids, and natural gas in 1978 | | $ | 1,447,695,000 |
| 13. | Percent petroleum value to total all minerals | | | 56.5% |
| 14. | Principal mineral products in order of value: | | | |
| | 1st — Crude Petroleum | | | |
| | 2nd — Coal | | | |
| | 3rd — Sodium Compounds | | | |
| 15. | Number of employees engaged in crude oil and natural gas production | | | 14,098 |
| 16. | First year of production of crude oil | | | 1867 |
| | natural gas | | | 1889 |
| 17. | First recorded production of crude oil (barrels) | 1894 | | 2,000 |
| | natural gas (Mcf) | 1906 | | 100 |
| 18. | State and local severance and production taxes paid in 1978 | | $ | 53,164,833 |

## PRODUCTION AND RESERVES

19. Year of largest production (crude oil) .......... 1970
20. Crude oil produced in year of largest production (barrels) .......... 160,345,000
21. Percent of crude oil produced by stripper wells .......... 3.8%
22. Number of producing wells at end of 1978: Crude Oil .......... 10,011
Gas & Condensate .......... 888
Total .......... 10,899
23. Average daily production of crude oil per well at end of 1978 .......... 35.2
24. Percent of wells pumping or on artificial lift .......... 92.8%
25. Average production in barrels daily:

| | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|
| Crude Oil | 372,447 | 336,527 | 373,896 | 374,789 |
| Natural Gas Liquids | 24,575 | 36,571 | 27,803 | 25,323 |
| Total Petroleum Liquids | 397,022 | 393,098 | 401,699 | 400,112 |

26. Production and new reserves found in 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| | | (Thousand Barrels) | | (Mil. Cu. Ft.) |
| New Reserves Found | 119,867 | 5,079 | 124,946 | 715,404 |
| Estimated Production | 130,878 | 8,516 | 139,394 | 362,479 |
| Net Change in Reserves | −11,011 | −3,437 | −14,448 | 352,925 |

27. Production and new reserves found all time to December 31, 1978:

| | Crude Oil | Natural Gas Liquids | Total Liquids Petroleum | Natural Gas |
|---|---|---|---|---|
| Total Reserves Found | 5,242,666 | 274,747 | 5,517,413 | 12,642,830 |
| Total Production | 4,438,099 | 222,905 | 4,661,004 | 8,327,055 |
| Proved Reserves Dec. 31, 1978 | 804,567 | 51,842 | 856,409 | 4,315,775 |

## EXPLORATION AND DEVELOPMENT

28. Deepest well drilled to January 1, 1979 (feet) .......... *Dry Hole* 23,081
29. Deepest producing well drilled to January 1, 1979 (feet) ....... *Gas/Condensate* 19,610
30. Wells and footage drilled in 1978:

| | Wildcat Wells | | Development Wells | | Total Wells | |
|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent |
| Oil Wells | 49 | 10.3 | 565 | 61.5 | 614 | 44.0 |
| Gas Wells | 40 | 8.4 | 131 | 14.3 | 171 | 12.3 |
| Dry Wells | 388 | 81.3 | 209 | 22.8 | 597 | 42.8 |
| Service Wells | 0 | 0 | 13 | 1.4 | 13 | 0.9 |
| Total Wells | 477 | 100.0 | 918 | 100.0 | 1,395 | 100.0 |
| Avg. Depth per Well | 8,269 | | 6,288 | | 6,965 | |
| Total Footage | 3,944,365 | | 5,772,355 | | 9,716,720 | |

31. Total wells drilled all time to January 1, 1979 (Excluding service wells):

| Oil | | Gas | | Dry | | Total | |
|---|---|---|---|---|---|---|---|
| Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| 20,591 | 52.8 | 2,288 | 5.9 | 16,129 | 41.3 | 39,008 | 100.0 |

32. Rotary Drilling Rigs Active in 1978 (average) .......... 136

# Geophysical Activity in The U.S. — 1969-1978
## Crew Months Worked

| | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|---|---|---|---|---|---|
| Atlantic Coast | 0 | 0 | 0 | 0 | 21 | 8 | 112 | 66 | 34 | 17 |
| Florida | 84 | 66 | 171 | 148 | 153 | 76 | 55 | 22 | 17 | 18 |
| New York | 9 | 5 | 13 | 22 | 28 | 8 | 14 | 15 | 12 | 2 |
| Pennsylvania | 1 | 10 | 46 | 105 | 64 | 44 | 32 | 26 | 21 | 41 |
| Virginia | 0 | 1 | 8 | 5 | 1 | 8 | 0 | 3 | 0 | 4 |
| West Virginia | 0 | 17 | 25 | 52 | 56 | 45 | 32 | 13 | 8 | 11 |
| Other | 24 | 24 | 2 | 20 | 20 | 17 | 5 | 5 | 2 | 9 |
| P.A.D. Dist. I | 118 | 123 | 265 | 352 | 343 | 206 | 250 | 150 | 94 | 102 |
| Illinois | 3 | 5 | 1 | 62 | 72 | 67 | 23 | 5 | 4 | 3 |
| Indiana | 0 | 0 | 0 | 19 | 18 | 10 | 1 | 1 | 0 | 0 |
| Kansas | 41 | 9 | 2 | 20 | 16 | 34 | 24 | 36 | 28 | 64 |
| Kentucky | 5 | 18 | 22 | 21 | 50 | 65 | 31 | 11 | 7 | 1 |
| Michigan | 92 | 133 | 185 | 175 | 232 | 201 | 267 | 266 | 180 | 244 |
| Nebraska | 2 | 1 | 0 | 7 | 7 | 0 | 1 | 3 | 5 | 2 |
| North Dakota | 90 | 59 | 48 | 56 | 41 | 72 | 34 | 44 | 96 | 269 |
| Ohio | 12 | 13 | 11 | 16 | 17 | 9 | 2 | 2 | 3 | 2 |
| Oklahoma | 229 | 122 | 205 | 220 | 128 | 153 | 151 | 90 | 103 | 234 |
| South Dakota | 19 | 6 | 21 | 6 | 8 | 30 | 8 | 0 | 1 | 63 |
| Other | 9 | 2 | 3 | 4 | 14 | 14 | 14 | 7 | 10 | 8 |
| P.A.D. Dist. II | 502 | 368 | 498 | 606 | 603 | 655 | 556 | 465 | 437 | 890 |
| Alabama | 123 | 114 | 140 | 136 | 73 | 74 | 97 | 81 | 13 | 32 |
| Arkansas | 40 | 17 | 53 | 49 | 46 | 48 | 25 | 32 | 45 | 48 |
| Louisiana | 444 | 322 | 316 | 388 | 315 | 357 | 377 | 347 | 318 | 560 |
| Mississippi | 215 | 241 | 256 | 310 | 176 | 76 | 160 | 163 | 199 | 173 |
| New Mexico | 75 | 62 | 86 | 98 | 94 | 133 | 74 | 79 | 53 | 89 |
| Texas | 872 | 728 | 663 | 606 | 686 | 989 | 929 | 942 | 722 | 1,095 |
| P.A.D. Dist. III | 1,769 | 1,484 | 1,514 | 1,587 | 1,390 | 1,677 | 1,662 | 1,644 | 1,350 | 1,997 |
| Colorado | 88 | 26 | 32 | 72 | 69 | 76 | 37 | 53 | 42 | 61 |
| Montana | 88 | 86 | 67 | 73 | 62 | 155 | 40 | 85 | 57 | 155 |
| Utah | 147 | 108 | 71 | 64 | 51 | 89 | 65 | 65 | 71 | 163 |
| Wyoming | 132 | 91 | 126 | 126 | 264 | 363 | 353 | 239 | 183 | 211 |
| Other | 0 | 0 | 4 | 40 | 3 | 3 | 1 | 17 | 24 | 34 |
| P.A.D. Dist. IV | 455 | 311 | 300 | 375 | 449 | 686 | 496 | 459 | 377 | 624 |
| Alaska | 178 | 113 | 67 | 84 | 64 | 184 | 176 | 129 | 34 | 16 |
| Arizona | 5 | 4 | 18 | 24 | 2 | 0 | 10 | 0 | 1 | 8 |
| California | 115 | 74 | 67 | 81 | 139 | 236 | 135 | 138 | 65 | 119 |
| Nevada | 10 | 25 | 7 | 16 | 9 | 16 | 16 | 11 | 38 | 45 |
| Other | 1 | 11 | 19 | 15 | 0 | 0 | 1 | 0 | 30 | 44 |
| P.A.D. Dist. V | 309 | 227 | 178 | 220 | 214 | 436 | 338 | 278 | 168 | 232 |
| TOTAL U.S. | 3,259* | 2,521 | 2,755 | 3,140 | 2,999 | 3,660 | 3,416* | 3,140* | 3,063* | 4,148* |

Source: Society of Exploration Geophysicists.

*For 1969 includes 106 Unspecified; for 1975 includes 114 Unspecified; for 1976 includes 56 Unspecified land and 88 Unspecified marine in Gulf of Mexico; for 1977 includes 502 Unspecified land, 46 Unspecified marine, and 89 Unspecified marine in Gulf of Mexico; for 1978 includes 95 Unspecified land and 208 Unspecified marine.

# Estimated Productive and Nonproductive Acreage Under Lease For Oil and Gas — 1977-1979

| | Total Land Area of State (Acres) | Total Acres Under Lease—Jan. 1st | | | Percent of Total Land Area Under Lease, Jan. 1, 1979 |
|---|---|---|---|---|---|
| | | 1977 | 1978 | 1979 | |
| Florida | 34,617,600 | 3,086,776 | 2,653,636 | 2,847,500 | 8.2 |
| Maryland | 6,330,240 | 204,200 | 204,200 | 285,900 | 4.5 |
| New York | 30,611,840 | 4,700,000 | 4,965,000 | 5,070,000 | 16.6 |
| Pennsylvania | 28,778,240 | 15,445,000 | 15,917,000 | 16,133,360 | 56.1 |
| Virginia | 25,459,200 | 871,536 | 1,019,501 | 1,205,866 | 4.7 |
| West Virginia | 15,404,800 | 11,838,000 | 12,158,000 | 12,972,000 | 84.2 |
| Total P.A.D. Dist. I | 141,201,920 | 36,145,512 | 36,917,337 | 38,514,626 | 27.3 |
| Illinois | 35,678,720 | 4,390,680 | 3,890,700 | 3,651,000 | 10.2 |
| Indiana | 23,102,080 | 3,313,900 | 3,516,860 | 3,569,640 | 15.5 |
| Kansas | 52,343,680 | 7,797,200 | 10,954,500 | 12,000,600 | 22.9 |
| Kentucky | 25,376,000 | 3,560,000 | 3,713,500 | 3,925,000 | 15.5 |
| Michigan | 36,362,880 | 11,878,517 | 12,292,591 | 12,540,201 | 34.5 |
| Missouri | 44,156,800 | 301,500 | 401,600 | 451,900 | 1.0 |
| Nebraska | 48,949,120 | 10,180,000 | 10,441,000 | 10,386,000 | 21.2 |
| North Dakota | 44,334,720 | 21,752,000 | 22,355,000 | 22,653,000 | 51.1 |
| Ohio | 26,224,000 | 15,199,900 | 15,191,470 | 15,188,185 | 57.9 |
| Oklahoma | 44,020,480 | 11,049,516 | 13,055,500 | 14,960,200 | 34.0 |
| South Dakota | 48,611,200 | 6,732,200 | 6,568,200 | 6,441,700 | 13.3 |
| Tennessee | 26,449,920 | 2,753,890 | 2,831,050 | 3,333,335 | 12.6 |
| Total P.A.D. Dist. II | 455,609,600 | 98,909,303 | 105,211,971 | 109,100,761 | 23.9 |
| Alabama | 32,453,120 | 4,173,450 | 4,497,000 | 5,512,000 | 17.0 |
| Arkansas | 33,244,800 | 7,899,300 | 8,115,810 | 7,917,300 | 23.8 |
| Louisiana | 28,755,200 | 14,976,500 | 14,786,300 | 17,620,500 | 61.3 |
| Mississippi | 30,269,440 | 7,345,880 | 7,118,020 | 7,651,100 | 25.3 |
| New Mexico | 77,703,680 | 29,035,000 | 29,514,000 | 29,350,000 | 37.8 |
| Texas | 167,765,760 | 47,491,300 | 47,818,700 | 49,128,800 | 29.3 |
| Total P.A.D. Dist. III | 370,192,000 | 110,921,430 | 111,849,830 | 117,179,730 | 31.7 |
| Colorado | 66,410,240 | 36,350,000 | 35,148,000 | 35,200,000 | 53.0 |
| Montana | 93,175,680 | 32,682,000 | 32,430,000 | 33,953,000 | 36.4 |
| Utah | 52,541,440 | 26,265,000 | 28,675,000 | 28,130,000 | 53.5 |
| Wyoming | 62,209,920 | 38,930,000 | 38,998,000 | 37,620,000 | 60.5 |
| Total P.A.D. Dist. IV | 274,337,280 | 134,227,000 | 135,251,000 | 134,903,000 | 49.2 |
| Alaska | 362,516,480 | 7,615,930 | 5,671,360 | 5,131,350 | 1.4 |
| Arizona | 72,586,880 | 9,106,300 | 9,246,300 | 10,974,900 | 15.1 |
| California | 100,071,040 | 4,288,205 | 3,665,600 | 3,553,900 | 3.6 |
| Nevada | 70,328,960 | 6,501,450 | 9,821,730 | 12,753,000 | 18.1 |
| Total P.A.D. Dist. V | 605,503,360 | 27,511,885 | 28,404,990 | 32,413,150 | 5.4 |
| Miscellaneous | 416,743,040 | * | * | * | * |
| Total U.S. | 2,263,587,200 | 407,715,130 | 417,645,128 | 432,111,267 | 19.1 |

*Not available.

Source: Various state and industry sources.

# Rotary Rigs Active in The United States — 1969-1978

| | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|---|---|---|---|---|---|
| Florida | 1 | 5 | 10 | 18 | 9 | 9 | 9 | 5 | 6 | 6 |
| New York | 0 | 0 | 1 | 1 | 2 | 7 | 8 | 9 | 7 | 7 |
| Pennsylvania | 7 | 9 | 9 | 8 | 11 | 14 | 10 | 10 | 15 | 25 |
| West Virginia | 17 | 16 | 17 | 17 | 20 | 16 | 10 | 12 | 17 | 27 |
| Other | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 6 |
| P.A.D. Dist. I | 26 | 31 | 39 | 46 | 44 | 48 | 39 | 37 | 47 | 71 |
| Illinois | 17 | 14 | 13 | 14 | 6 | 7 | 19 | 22 | 16 | 28 |
| Indiana | 2 | 1 | 1 | 2 | 0 | 1 | 2 | 2 | 3 | 4 |
| Kansas | 38 | 30 | 29 | 25 | 28 | 44 | 57 | 51 | 68 | 76 |
| Kentucky | 3 | 1 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 3 |
| Michigan | 11 | 11 | 12 | 18 | 19 | 24 | 28 | 24 | 24 | 24 |
| Nebraska | 9 | 6 | 5 | 6 | 4 | 7 | 9 | 8 | 9 | 10 |
| North Dakota | 12 | 9 | 9 | 7 | 10 | 12 | 17 | 19 | 24 | 39 |
| Ohio | 22 | 24 | 17 | 23 | 36 | 30 | 21 | 26 | 33 | 47 |
| Oklahoma | 120 | 98 | 90 | 91 | 115 | 146 | 178 | 186 | 233 | 258 |
| South Dakota | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 2 |
| Other | 1 | 2 | 2 | 2 | 1 | 1 | 2 | 0 | 1 | 1 |
| P.A.D. Dist. II | 236 | 198 | 181 | 191 | 222 | 275 | 335 | 342 | 416 | 492 |
| Alabama | 6 | 7 | 8 | 15 | 13 | 12 | 14 | 17 | 13 | 13 |
| Arkansas | 16 | 13 | 15 | 15 | 15 | 18 | 14 | 15 | 15 | 14 |
| Louisiana | 229 | 204 | 193 | 216 | 205 | 203 | 227 | 231 | 292 | 338 |
| Mississippi | 40 | 44 | 39 | 37 | 29 | 29 | 25 | 32 | 42 | 45 |
| New Mexico | 64 | 40 | 47 | 57 | 62 | 79 | 71 | 54 | 69 | 76 |
| Texas | 322 | 302 | 291 | 325 | 376 | 508 | 637 | 653 | 779 | 855 |
| P.A.D. Dist. III | 677 | 610 | 593 | 665 | 700 | 849 | 988 | 1,002 | 1,210 | 1,341 |
| Colorado | 23 | 25 | 30 | 36 | 42 | 46 | 43 | 38 | 45 | 41 |
| Montana | 31 | 17 | 17 | 20 | 19 | 24 | 27 | 28 | 27 | 30 |
| Utah | 12 | 12 | 17 | 34 | 38 | 42 | 26 | 19 | 30 | 32 |
| Wyoming | 81 | 71 | 45 | 62 | 70 | 107 | 107 | 86 | 118 | 136 |
| Other | 0 | 0 | 0 | 0 | 1 | 0 | <1 | 0 | 1 | 3 |
| P.A.D. Dist. IV | 147 | 125 | 109 | 152 | 170 | 219 | 203 | 171 | 221 | 242 |
| Alaska | 28 | 14 | 5 | 5 | 5 | 9 | 14 | 14 | 15 | 16 |
| Arizona | 2 | 1 | 1 | 1 | 2 | 1 | <1 | 1 | <1 | <1 |
| California | 78 | 52 | 46 | 46 | 51 | 72 | 80 | 89 | 90 | 94 |
| Nevada | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 2 | 3 | 3 |
| Other | 0 | 0 | 0 | 1 | 0 | 0 | <1 | 1 | <1 | <1 |
| P.A.D. Dist. V | 108 | 67 | 53 | 53 | 58 | 83 | 95 | 106 | 108 | 113 |
| TOTAL U.S. | 1,194 | 1,031 | 975 | 1,107 | 1,194 | 1,474 | 1,660 | 1,658 | 2,002 | 2,259 |

< = Less than.
Source: Hughes Tool Co.

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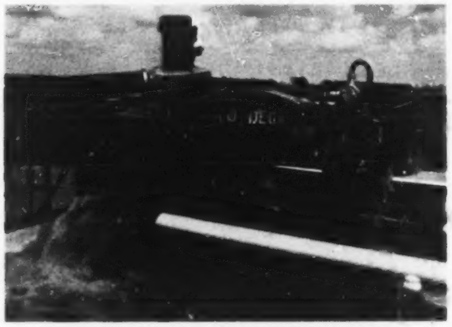

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*RS-125, RS-140 are trademarks of Republic Steel Corporation.

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# Total New Field Wildcat Wells Drilled in The U.S. — 1969-1978

| | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|---|---|---|---|---|---|
| Florida | 7 | 10 | 13 | 41 | 35 | 30 | 25 | 13 | 12 | 15 |
| Maryland | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| New York | 5 | 10 | 8 | 7 | 14 | 37 | 12 | 37 | 39 | 30 |
| Pennsylvania | 20 | 7 | 8 | 22 | 30 | 16 | 27 | 15 | 29 | 24 |
| Virginia | 7 | 0 | 0 | 0 | 4 | 1 | 2 | 1 | 0 | 2 |
| West Virginia | 24 | 26 | 32 | 31 | 18 | 19 | 25 | 24 | 21 | 19 |
| Other | 3 | 4 | 14 | 2 | 3 | 16 | 5 | 4 | 0 | 0 |
| P.A.D. Dist. I | 66 | 57 | 75 | 103 | 104 | 120 | 96 | 94 | 101 | 90 |
| Illinois | 86 | 88 | 69 | 61 | 72 | 103 | 106 | 86 | 51 | 77 |
| Indiana | 79 | 81 | 60 | 82 | 101 | 102 | 68 | 86 | 67 | 103 |
| Kansas | 274 | 193 | 151 | 199 | 232 | 285 | 274 | 306 | 298 | 284 |
| Kentucky | 124 | 133 | 118 | 123 | 87 | 93 | 153 | 113 | 84 | 57 |
| Michigan | 159 | 153 | 152 | 173 | 165 | 251 | 270 | 279 | 326 | 265 |
| Missouri | 1 | 4 | 6 | 2 | 8 | 24 | 16 | 8 | 9 | 7 |
| Nebraska | 224 | 150 | 104 | 187 | 97 | 145 | 182 | 159 | 204 | 201 |
| North Dakota | 161 | 95 | 87 | 56 | 56 | 59 | 88 | 79 | 73 | 128 |
| Ohio | 10 | 14 | 6 | 18 | 19 | 11 | 5 | 14 | 11 | 3 |
| Oklahoma | 200 | 188 | 144 | 176 | 159 | 198 | 191 | 201 | 210 | 210 |
| South Dakota | 55 | 83 | 35 | 21 | 21 | 9 | 21 | 26 | 18 | 16 |
| Tennessee | 14 | 14 | 86 | 39 | 45 | 47 | 85 | 93 | 74 | 85 |
| Other | 0 | 3 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| P.A.D. Dist. II | 1,387 | 1,199 | 1,019 | 1,137 | 1,062 | 1,329 | 1,459 | 1,450 | 1,426 | 1,436 |
| Alabama | 31 | 25 | 45 | 85 | 66 | 47 | 59 | 63 | 42 | 59 |
| Arkansas | 99 | 66 | 73 | 89 | 76 | 88 | 78 | 76 | 78 | 95 |
| Louisiana | 498 | 436 | 462 | 481 | 490 | 465 | 521 | 425 | 496 | 555 |
| Mississippi | 255 | 204 | 196 | 232 | 191 | 258 | 226 | 232 | 247 | 243 |
| New Mexico | 148 | 137 | 125 | 181 | 177 | 192 | 156 | 138 | 114 | 125 |
| Texas | 1,756 | 1,494 | 1,296 | 1,458 | 1,632 | 1,980 | 2,325 | 2,325 | 2,460 | 2,708 |
| P.A.D. Dist. III | 2,787 | 2,362 | 2,197 | 2,526 | 2,632 | 3,030 | 3,365 | 3,259 | 3,437 | 3,785 |
| Colorado | 476 | 439 | 486 | 389 | 357 | 296 | 349 | 310 | 282 | 336 |
| Montana | 442 | 379 | 261 | 401 | 387 | 316 | 286 | 234 | 230 | 237 |
| Utah | 75 | 30 | 41 | 69 | 46 | 47 | 59 | 34 | 79 | 65 |
| Wyoming | 544 | 453 | 272 | 352 | 300 | 402 | 376 | 335 | 382 | 402 |
| Other | 0 | 0 | 0 | 0 | 6 | 2 | 1 | 2 | 1 | 6 |
| P.A.D. Dist. IV | 1,537 | 1,301 | 1,060 | 1,211 | 1,096 | 1,063 | 1,071 | 915 | 974 | 1,046 |
| Alaska | 11 | 35 | 4 | 11 | 9 | 7 | 12 | 7 | 14 | 4 |
| Arizona | 22 | 9 | 5 | 10 | 4 | 5 | 2 | 0 | 0 | 4 |
| California | 132 | 96 | 89 | 86 | 79 | 87 | 64 | 76 | 112 | 110 |
| Nevada | 14 | 10 | 13 | 2 | 0 | 2 | 4 | 7 | 10 | 13 |
| Other | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 6 | 0 |
| P.A.D. Dist. V | 179 | 150 | 111 | 109 | 95 | 101 | 82 | 93 | 142 | 131 |
| Alaska Fed. Waters | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 |
| Gulf of Mexico* | 0 | 0 | 0 | 0 | 0 | 9 | 31 | 29 | 14 | 14 |
| Total Fed. Waters | 0 | 0 | 0 | 0 | 0 | 9 | 31 | 29 | 21 | 17 |
| TOTAL U.S. | 5,956 | 5,069 | 4,462 | 5,086 | 4,989 | 5,652 | 6,104 | 5,840 | 6,101 | 6,505 |

*Gulf of Mexico Northern is a new area designated by the Bureau of Land Management for federally controlled Outer Continental Shelf (OCS) waters not previously mapped or leased. The area covers Gulf of Mexico OCS waters off the states of Texas, Louisiana, Mississippi, Alabama, and Florida.

Source: American Association of Petroleum Geologists and American Petroleum Institute.

# Total Exploratory Wells Drilled in The U.S. — 1969-1978

| | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|---|---|---|---|---|---|
| Florida | 8 | 10 | 13 | 42 | 37 | 30 | 27 | 14 | 12 | 16 |
| New York | 6 | 11 | 10 | 14 | 21 | 49 | 21 | 52 | 50 | 47 |
| Pennsylvania | 43 | 40 | 22 | 66 | 97 | 101 | 109 | 71 | 93 | 96 |
| Virginia | 8 | 0 | 0 | 0 | 4 | 8 | 8 | 3 | 9 | 5 |
| West Virginia | 83 | 74 | 66 | 83 | 80 | 102 | 91 | 99 | 108 | 165 |
| Other | 3 | 4 | 14 | 2 | 3 | 18 | 6 | 4 | 0 | 0 |
| P.A.D. Dist. I | 151 | 139 | 125 | 207 | 242 | 308 | 262 | 243 | 272 | 329 |
| Illinois | 241 | 198 | 165 | 149 | 196 | 220 | 254 | 247 | 241 | 265 |
| Indiana | 178 | 144 | 114 | 131 | 139 | 168 | 156 | 195 | 277 | 267 |
| Kansas | 1,058 | 833 | 741 | 764 | 739 | 847 | 879 | 914 | 980 | 1,107 |
| Kentucky | 256 | 228 | 202 | 220 | 164 | 184 | 313 | 373 | 365 | 351 |
| Michigan | 164 | 155 | 161 | 182 | 176 | 258 | 272 | 282 | 329 | 266 |
| Missouri | 7 | 4 | 6 | 3 | 8 | 24 | 16 | 8 | 9 | 7 |
| Nebraska | 285 | 161 | 107 | 198 | 102 | 155 | 202 | 188 | 232 | 221 |
| North Dakota | 178 | 109 | 97 | 65 | 72 | 74 | 109 | 116 | 106 | 163 |
| Ohio | 53 | 36 | 27 | 55 | 60 | 172 | 121 | 171 | 125 | 40 |
| Oklahoma | 546 | 458 | 415 | 416 | 352 | 396 | 394 | 434 | 473 | 502 |
| South Dakota | 56 | 83 | 35 | 26 | 21 | 9 | 22 | 27 | 22 | 17 |
| Tennessee | 23 | 22 | 128 | 67 | 66 | 85 | 143 | 165 | 156 | 151 |
| Other | 0 | 3 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 |
| P.A.D. Dist. II | 3,045 | 2,434 | 2,199 | 2,276 | 2,095 | 2,594 | 2,881 | 3,120 | 3,316 | 3,357 |
| Alabama | 34 | 27 | 48 | 85 | 70 | 58 | 65 | 69 | 44 | 63 |
| Arkansas | 131 | 85 | 92 | 101 | 79 | 90 | 78 | 76 | 86 | 95 |
| Louisiana | 865 | 671 | 802 | 736 | 712 | 646 | 708 | 611 | 645 | 781 |
| Mississippi | 373 | 235 | 200 | 236 | 207 | 292 | 263 | 266 | 260 | 247 |
| New Mexico | 190 | 163 | 129 | 216 | 191 | 209 | 170 | 172 | 172 | 174 |
| Texas | 2,718 | 2,098 | 1,818 | 1,973 | 2,325 | 2,907 | 3,203 | 3,269 | 3,549 | 3,884 |
| P.A.D. Dist. III | 4,311 | 3,279 | 3,089 | 3,347 | 3,584 | 4,202 | 4,487 | 4,463 | 4,756 | 5,244 |
| Colorado | 538 | 476 | 563 | 512 | 442 | 338 | 413 | 372 | 383 | 463 |
| Montana | 499 | 424 | 303 | 447 | 435 | 381 | 379 | 321 | 319 | 308 |
| Utah | 103 | 43 | 55 | 86 | 70 | 56 | 66 | 39 | 94 | 79 |
| Wyoming | 716 | 569 | 345 | 451 | 369 | 470 | 461 | 395 | 465 | 477 |
| Other | 0 | 0 | 0 | 0 | 6 | 2 | 1 | 2 | 1 | 6 |
| P.A.D. Dist. IV | 1,856 | 1,512 | 1,266 | 1,496 | 1,322 | 1,247 | 1,320 | 1,129 | 1,262 | 1,333 |
| Alaska | 12 | 60 | 5 | 13 | 14 | 12 | 22 | 7 | 22 | 10 |
| Arizona | 24 | 9 | 5 | 12 | 4 | 5 | 2 | 0 | 0 | 4 |
| California | 288 | 250 | 220 | 186 | 202 | 235 | 205 | 233 | 296 | 370 |
| Nevada | 14 | 10 | 13 | 2 | 0 | 2 | 4 | 7 | 14 | 13 |
| Other | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 3 | 2 | 0 |
| P.A.D. Dist. V | 338 | 329 | 243 | 213 | 223 | 254 | 233 | 250 | 334 | 397 |
| Alaska Fed. Waters | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 |
| Gulf of Mexico* | 0 | 0 | 0 | 0 | 0 | 14 | 31 | 29 | 14 | 14 |
| Total Federal Waters | 0 | 0 | 0 | 0 | 0 | 14 | 31 | 29 | 21 | 17 |
| TOTAL U.S. | 9,701 | 7,693 | 6,922 | 7,539 | 7,466 | 8,619 | 9,214 | 9,234 | 9,961 | 10,677 |

*Gulf of Mexico Northern is a new area designated by the Bureau of Land Management for federally controlled Outer Continental Shelf (OCS) waters not previously mapped or leased. The area covers Gulf of Mexico OCS waters off the states of Texas, Louisiana, Mississippi, Alabama, and Florida.

Source: American Association of Petroleum Geologists and American Petroleum Institute.

## Gallons of Gasoline Which One Hour's Wage Will Buy

| | Average Hourly Earnings All Mfg. ($ per hr.) | Retail Price Reg. Gaso. Incl. Tax (¢ per gal.) | Gallons of Gasoline One Hour's Wage Buys |
|---|---|---|---|
| 1929 | 0.560 | 21.42 | 2.6 |
| 1930 | 0.546 | 19.95 | 2.7 |
| 1931 | 0.509 | 16.98 | 3.0 |
| 1932 | 0.441 | 17.93 | 2.5 |
| 1933 | 0.437 | 17.82 | 2.5 |
| 1934 | 0.526 | 18.85 | 2.8 |
| 1935 | 0.544 | 18.84 | 2.9 |
| 1936 | 0.550 | 19.45 | 2.8 |
| 1937 | 0.617 | 19.99 | 3.1 |
| 1938 | 0.620 | 19.51 | 3.2 |
| 1939 | 0.627 | 18.75 | 3.3 |
| 1940 | 0.655 | 18.41 | 3.6 |
| 1941 | 0.726 | 19.23 | 3.8 |
| 1942 | 0.851 | 20.43 | 4.2 |
| 1943 | 0.957 | 20.53 | 4.7 |
| 1944 | 1.011 | 20.59 | 4.9 |
| 1945 | 1.016 | 20.50 | 5.0 |
| 1946 | 1.075 | 20.77 | 5.2 |
| 1947 | 1.217 | 23.11 | 5.3 |
| 1948 | 1.328 | 25.88 | 5.1 |
| 1949 | 1.378 | 26.79 | 5.1 |
| 1950 | 1.440 | 26.76 | 5.4 |
| 1951 | 1.560 | 27.15 | 5.7 |
| 1952 | 1.650 | 27.56 | 6.0 |
| 1953 | 1.740 | 28.69 | 6.1 |
| 1954 | 1.780 | 29.04 | 6.1 |
| 1955 | 1.860 | 29.07 | 6.4 |
| 1956 | 1.950 | 29.93 | 6.5 |
| 1957 | 2.050 | 30.96 | 6.6 |
| 1958 | 2.110 | 30.38 | 6.9 |
| 1959 | 2.190 | 30.49 | 7.2 |
| 1960 | 2.260 | 31.13 | 7.3 |
| 1961 | 2.320 | 30.76 | 7.5 |
| 1962 | 2.390 | 30.64 | 7.8 |
| 1963 | 2.460 | 30.42 | 8.1 |
| 1964 | 2.530 | 30.35 | 8.3 |
| 1965 | 2.610 | 31.17 | 8.4 |
| 1966 | 2.720 | 32.08 | 8.5 |
| 1967 | 2.830 | 33.15 | 8.5 |
| 1968 | 3.010 | 33.71 | 8.9 |
| 1969 | 3.190 | 34.84 | 9.2 |
| 1970 | 3.360 | 35.69 | 9.4 |
| 1971 | 3.560 | 36.48 | 9.8 |
| 1972 | 3.810 | 36.13 | 10.5 |
| 1973 | 4.060 | 38.82 | 10.5 |
| 1974 | 4.400 | 52.58 | 8.4 |
| 1975 | 4.800 | 57.19 | 8.4 |
| 1976 | 5.190 | 59.47 | 8.7 |
| 1977 | 5.630 | 63.07 | 8.9 |
| 1978 | 6.140 | 65.71 | 9.3 |

Source: BLS and Platt's Oilgram Price Service.

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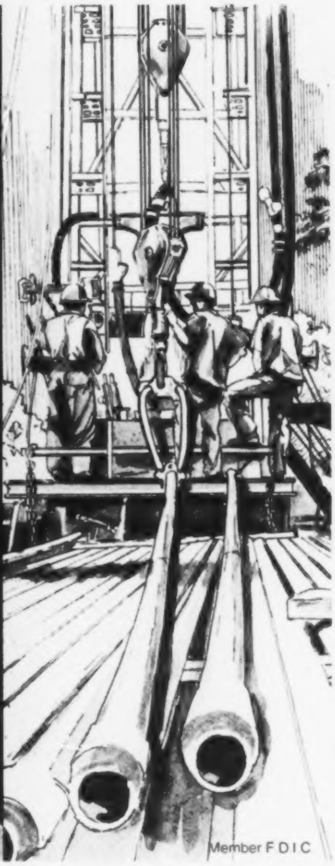

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# Total Wells Drilled for Oil and Gas
# All Time to January 1, 1979

(Excluding Service Wells)

| | OIL | | GAS | | DRY | | TOTAL |
|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number |
| Florida | 209 | 26.2 | 2 | 0.3 | 586 | 73.5 | 797 |
| Maryland | 0 | 0 | 72 | 61.5 | 45 | 38.5 | 117 |
| New York | 8,647 | 78.0 | 1,526 | 13.8 | 918 | 8.2 | 11,091 |
| Pennsylvania | 240,424 | 80.5 | 20,072 | 6.7 | 38,070 | 12.8 | 298,566 |
| Virginia | 12 | 3.7 | 237 | 73.2 | 75 | 23.1 | 324 |
| West Virginia | 46,305 | 46.2 | 35,187 | 35.1 | 18,751 | 18.7 | 100,243 |
| P.A.D. Dist. I | 295,597 | 71.9 | 57,096 | 13.9 | 58,445 | 14.2 | 411,138 |
| Illinois | 67,878 | 61.4 | 1,363 | 1.2 | 41,269 | 37.4 | 110,510 |
| Indiana | 35,464 | 60.2 | 1,944 | 3.3 | 21,517 | 36.5 | 58,925 |
| Kansas | 98,203 | 52.7 | 17,988 | 9.6 | 70,328 | 37.7 | 186,519 |
| Kentucky | 44,763 | 53.5 | 9,213 | 11.0 | 29,731 | 35.5 | 83,707 |
| Michigan | 12,057 | 40.3 | 2,364 | 7.9 | 15,524 | 51.8 | 29,945 |
| Missouri | 229 | 19.6 | 174 | 14.9 | 763 | 65.5 | 1,166 |
| Nebraska | 4,109 | 29.5 | 134 | 1.0 | 9,678 | 69.5 | 13,921 |
| North Dakota | 3,038 | 47.9 | 5 | 0.1 | 3,293 | 52.0 | 6,336 |
| Ohio | 61,024 | 47.0 | 33,665 | 26.0 | 35,002 | 27.0 | 129,691 |
| Oklahoma | 195,267 | 61.5 | 30,204 | 9.5 | 91,979 | 29.0 | 317,450 |
| South Dakota | 100 | 14.0 | 7 | 1.0 | 606 | 85.0 | 713 |
| Tennessee | 730 | 24.0 | 379 | 12.4 | 1,939 | 63.6 | 3,048 |
| P.A.D. Dist. II | 522,862 | 55.5 | 97,440 | 10.3 | 321,629 | 34.2 | 941,931 |
| Alabama | 732 | 28.5 | 257 | 10.0 | 1,577 | 61.5 | 2,566 |
| Arkansas | 15,543 | 56.0 | 2,058 | 7.4 | 10,145 | 36.6 | 27,746 |
| Louisiana | 68,953 | 48.4 | 20,559 | 14.5 | 52,857 | 37.1 | 142,369 |
| Mississippi | 6,360 | 34.1 | 870 | 4.7 | 11,397 | 61.2 | 18,627 |
| New Mexico | 24,182 | 52.1 | 11,866 | 25.5 | 10,393 | 22.4 | 46,441 |
| Texas | 401,680 | 59.6 | 48,352 | 7.2 | 223,424 | 33.2 | 673,456 |
| P.A.D. Dist. III | 517,450 | 56.8 | 83,962 | 9.2 | 309,793 | 34.0 | 911,205 |
| Colorado | 7,238 | 27.4 | 3,224 | 12.2 | 15,936 | 60.4 | 26,398 |
| Montana | 8,624 | 38.2 | 2,917 | 12.9 | 11,024 | 48.9 | 22,565 |
| Utah | 2,211 | 40.6 | 576 | 10.6 | 2,663 | 48.8 | 5,450 |
| Wyoming | 20,591 | 52.8 | 2,288 | 5.9 | 16,129 | 41.3 | 39,008 |
| P.A.D. Dist. IV | 38,664 | 41.4 | 9,005 | 9.6 | 45,752 | 49.0 | 93,421 |
| Alaska | 605 | 55.0 | 93 | 8.5 | 401 | 36.5 | 1,099 |
| Arizona | 40 | 9.3 | 34 | 7.9 | 355 | 82.8 | 429 |
| California | 90,123 | 77.1 | 2,611 | 2.2 | 24,139 | 20.7 | 166,873 |
| Nevada | 23 | 11.1 | 0 | 0 | 185 | 88.9 | 208 |
| P.A.D. Dist. V | 90,791 | 76.6 | 2,738 | 2.3 | 25,080 | 21.1 | 118,609 |
| Alaska | 0 | 0 | 0 | 0 | 10 | 100.0 | 10 |
| Atlantic Coast | 0 | 0 | 0 | 0 | 7 | 100.0 | 7 |
| Gulf of Mexico* | 18 | 14.3 | 2 | 1.6 | 106 | 84.1 | 126 |
| Total Federal Waters | 18 | 12.6 | 2 | 1.4 | 123 | 86.0 | 143 |
| Miscellaneous | 3 | 0.6 | 1 | 0.2 | 481 | 99.2 | 485 |
| TOTAL U.S. | 1,465,385 | 59.2 | 250,244 | 10.1 | 761,303 | 30.7 | 2,476,932 |

*Gulf of Mexico Northern is a new area designated by the Bureau of Land Management for federally controlled Outer Continental Shelf (OCS) waters not previously mapped or leased. The area covers Gulf of Mexico OCS waters off the states of Texas, Louisiana, Mississippi, Alabama, and Florida.

Sources: Oil and Gas Journal, American Petroleum Institute, and American Association of Petroleum Geologists.

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**Improved Buttress-Thread Tubing**

# Estimated Cost of Drilling and Equipping Wells - 1976

| | Wells Drilled (No.) | Footage Drilled (Th. Ft.) | Total Cost (Th. $) | Average | | |
|---|---|---|---|---|---|---|
| | | | | Depth/ Well (Ft.) | Cost/ Well | Cost/ Foot |
| Alabama | 110 | 1,066 | 64,782 | 9,689 | $ 588,930 | $ 60.79 |
| Alaska: | | | | | | |
| Onshore | 49 | 534 | 155,866 | 10,895 | 3,180,941 | 291.96 |
| Offshore | 9 | 104 | 18,418 | 11,625 | 2,046,456 | 176.03 |
| Total | 58 | 638 | 174,284 | 11,009 | 3,004,901 | 272.96 |
| Arkansas | 433 | 2,055 | 53,427 | 4,745 | 123,388 | 26.00 |
| California: | | | | | | |
| North | 186 | 1,138 | 33,191 | 6,117 | 178,445 | 29.17 |
| Central Coastal | 252 | 957 | 51,317 | 3,797 | 203,638 | 53.63 |
| East Central | 1,710 | 3,657 | 167,796 | 2,139 | 98,126 | 45.88 |
| South | 143 | 442 | 24,729 | 3,095 | 172,931 | 55.87 |
| Offshore | 28 | 179 | 46,098 | 6,390 | 1,646,355 | 257.65 |
| Total | 2,319 | 6,373 | 323,131 | 2,748 | 139,341 | 50.70 |
| Colorado | 1,063 | 5,592 | 139,273 | 5,260 | 131,019 | 24.91 |
| Florida | 20 | 244 | 13,433 | 12,222 | 671,660 | 54.96 |
| Illinois | 1,197 | 2,952 | 50,062 | 2,466 | 41,823 | 16.96 |
| Indiana | 463 | 796 | 13,045 | 1,718 | 28,174 | 16.40 |
| Kansas | 3,527 | 11,171 | 185,809 | 3,167 | 52,682 | 16.63 |
| Kentucky | 1,027 | 1,492 | 32,844 | 1,453 | 31,980 | 22.02 |
| Louisiana: | | | | | | |
| North | 1,667 | 5,805 | 160,672 | 3,482 | 96,384 | 27.68 |
| South | 1,083 | 11,138 | 642,772 | 10,285 | 593,510 | 57.71 |
| Offshore | 702 | 6,869 | 890,879 | 9,785 | 1,269,059 | 129.69 |
| Total | 3,452 | 23,812 | 1,694,323 | 6,898 | 490,823 | 71.15 |
| Michigan | 487 | 2,346 | 82,946 | 4,817 | 170,320 | 35.36 |
| Mississippi | 493 | 4,030 | 136,650 | 8,174 | 277,180 | 33.91 |
| Montana | 722 | 2,643 | 78,446 | 3,661 | 108,650 | 29.68 |
| Nebraska | 313 | 1,553 | 15,729 | 4,961 | 50,254 | 10.13 |
| New Mexico: | | | | | | |
| East | 580 | 3,593 | 139,294 | 6,195 | 240,163 | 38.76 |
| West | 397 | 1,620 | 53,235 | 4,079 | 134,093 | 32.87 |
| Total | 977 | 5,213 | 192,529 | 5,336 | 197,062 | 36.93 |
| North Dakota | 238 | 1,711 | 64,348 | 7,190 | 270,368 | 37.60 |
| Oklahoma | 4,164 | 22,174 | 779,874 | 5,325 | 187,290 | 35.17 |
| Texas: | | | | | | |
| District 1 | 1,136 | 5,581 | 186,324 | 4,913 | 164,017 | 33.39 |
| District 2 | 724 | 4,393 | 132,549 | 6,068 | 183,079 | 30.17 |
| District 3 | 1,019 | 7,044 | 290,835 | 6,913 | 285,412 | 41.29 |
| District 4 | 1,080 | 7,211 | 327,617 | 6,677 | 303,349 | 45.43 |
| District 5 | 173 | 988 | 48,876 | 5,713 | 282,520 | 49.46 |
| District 6 | 372 | 2,616 | 99,773 | 7,032 | 268,208 | 38.14 |
| District 7B | 1,474 | 5,021 | 93,200 | 3,046 | 63,229 | 18.56 |
| District 7C | 1,040 | 6,032 | 156,447 | 5,800 | 150,430 | 25.94 |
| District 8 | 1,770 | 10,527 | 429,478 | 5,947 | 242,643 | 40.80 |
| District 8A | 949 | 5,741 | 152,373 | 6,049 | 160,562 | 26.54 |
| District 9 | 1,787 | 5,156 | 93,863 | 2,885 | 52,525 | 18.20 |
| District 10 | 545 | 3,714 | 152,184 | 6,814 | 279,236 | 40.98 |
| Offshore | 257 | 2,358 | 415,451 | 9,175 | 1,616,542 | 176.19 |
| Total | 12,326 | 66,382 | 2,578,970 | 5,386 | 209,230 | 38.85 |
| Utah | 126 | 890 | 72,393 | 7,068 | 574,552 | 81.29 |
| Wyoming | 979 | 7,014 | 299,518 | 7,165 | 305,942 | 42.70 |
| Appalachian* | 4,181 | 13,381 | 293,141 | 3,200 | 70,113 | 21.91 |
| Gulf of Mexico** | 32 | 307 | 104,113 | 9,585 | 3,253,523 | 339.45 |
| Other States*** | 234 | 583 | 18,610 | 2,491 | 79,532 | 31.93 |
| TOTAL U.S. | 38,941 | 184,418 | 7,461,680 | 4,736 | 191,615 | 40.46 |

Source: Joint Association Survey.

*New York, Ohio, Pennsylvania, and West Virginia.

**Gulf of Mexico Northern is a new area designated by the Bureau of Land Management for federally controlled Outer Continental Shelf (OCS) waters not previously mapped or leased. The area covers Gulf of Mexico OCS waters off the states of Texas, Louisiana, Mississippi, Alabama, and Florida.

***Georgia, Idaho, Missouri, Nevada, South Dakota, Tennessee, Virginia, and Washington.

# Estimated Cost of Drilling and Equipping Wells - 1977

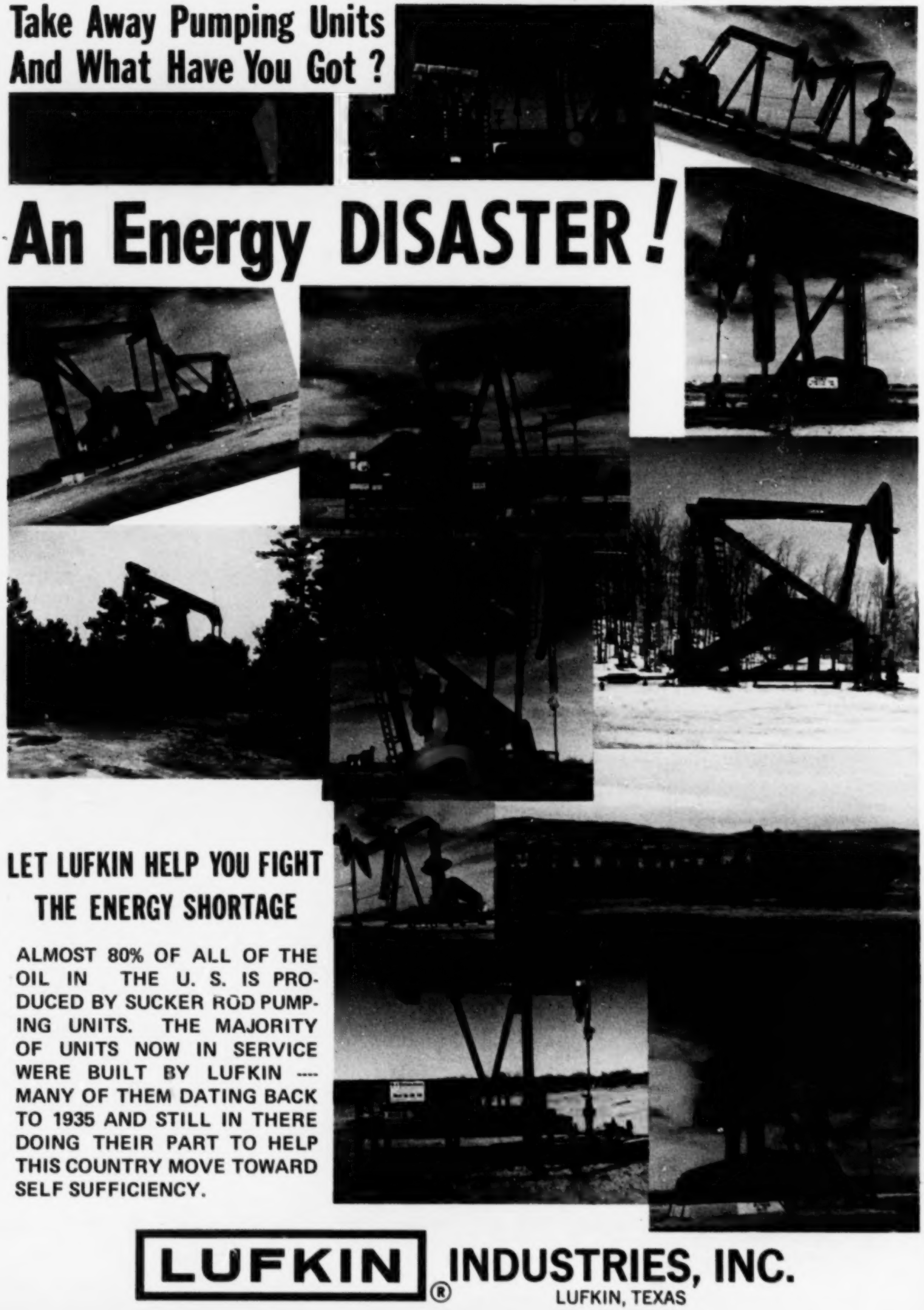
| | Wells Drilled (No.) | Footage Drilled (Th. Ft.) | Total Cost (Th. $) | Average | | |
|---|---|---|---|---|---|---|
| | | | | Depth/ Well (Ft.) | Cost/ Well | Cost/ Foot |
| Alabama | 130 | 1,100 | 86,340 | 8,463 | $ 664,152 | $ 78.47 |
| Alaska: | | | | | | |
| Onshore | 45 | 471 | 179,068 | 10,470 | 3,979,284 | 380.06 |
| Offshore | 12 | 129 | 26,307 | 10,728 | 2,192,292 | 204.35 |
| Total | 57 | 600 | 205,375 | 10,524 | 3,603,075 | 342.35 |
| Arkansas | 483 | 2,394 | 64,242 | 4,956 | 133,005 | 26.84 |
| California: | | | | | | |
| North | 167 | 983 | 31,717 | 5,883 | 189,920 | 32.28 |
| Central Coastal | 278 | 944 | 52,443 | 3,395 | 188,642 | 55.56 |
| East Central | 1,692 | 3,569 | 169,238 | 2,109 | 100,022 | 47.41 |
| South | 98 | 376 | 25,744 | 3,834 | 262,694 | 68.51 |
| Offshore | 62 | 332 | 96,510 | 5,355 | 1,556,611 | 290.63 |
| Total | 2,297 | 6,204 | 375,651 | 2,700 | 163,540 | 60.55 |
| Colorado | 1,101 | 5,828 | 173,004 | 5,293 | 157,133 | 29.68 |
| Florida | 27 | 337 | 21,410 | 12,466 | 792,970 | 63.61 |
| Illinois | 989 | 2,865 | 51,909 | 2,897 | 52,486 | 18.12 |
| Indiana | 603 | 1,288 | 22,052 | 2,136 | 36,570 | 17.12 |
| Kansas | 3,891 | 12,815 | 228,937 | 3,293 | 58,837 | 17.86 |
| Kentucky | 941 | 1,318 | 32,594 | 1,400 | 34,637 | 24.72 |
| Louisiana: | | | | | | |
| North | 1,626 | 6,094 | 186,466 | 3,748 | 114,677 | 30.60 |
| South | 1,064 | 11,266 | 796,239 | 10,588 | 748,344 | 70.67 |
| Offshore | 848 | 8,277 | 1,331,209 | 9,760 | 1,569,822 | 160.83 |
| Total | 3,538 | 25,638 | 2,313,914 | 7,246 | 654,017 | 90.25 |
| Michigan | 498 | 2,424 | 96,803 | 4,867 | 194,383 | 39.94 |
| Mississippi | 519 | 4,450 | 215,121 | 8,574 | 414,491 | 48.34 |
| Montana | 612 | 2,316 | 78,804 | 3,783 | 128,764 | 34.03 |
| Nebraska | 409 | 2,038 | 27,684 | 4,983 | 67,686 | 13.58 |
| New Mexico: | | | | | | |
| East | 727 | 4,685 | 212,384 | 6,444 | 292,137 | 45.33 |
| West | 634 | 2,923 | 100,583 | 4,610 | 158,648 | 34.41 |
| Total | 1,361 | 7,608 | 312,967 | 5,589 | 229,954 | 41.14 |
| North Dakota | 234 | 1,837 | 84,179 | 7,848 | 359,740 | 45.83 |
| Oklahoma | 4,919 | 25,606 | 1,037,826 | 5,205 | 210,983 | 40.53 |
| Texas: | | | | | | |
| District 1 | 1,185 | 6,181 | 234,155 | 5,215 | 197,599 | 37.89 |
| District 2 | 902 | 5,497 | 195,986 | 6,094 | 217,279 | 35.65 |
| District 3 | 1,235 | 8,724 | 459,216 | 7,064 | 371,834 | 52.64 |
| District 4 | 1,204 | 8,256 | 425,845 | 6,857 | 353,692 | 51.58 |
| District 5 | 169 | 1,174 | 71,043 | 6,945 | 420,372 | 60.52 |
| District 6 | 402 | 2,983 | 151,610 | 7,421 | 377,138 | 50.82 |
| District 7B | 2,255 | 7,229 | 150,696 | 3,205 | 66,827 | 20.85 |
| District 7C | 1,429 | 8,137 | 228,953 | 5,693 | 160,218 | 28.41 |
| District 8 | 1,586 | 9,488 | 467,250 | 5,982 | 294,609 | 49.25 |
| District 8A | 1,175 | 7,225 | 219,102 | 6,148 | 186,469 | 30.33 |
| District 9 | 2,003 | 6,253 | 122,066 | 3,121 | 60,911 | 19.51 |
| District 10 | 519 | 3,850 | 199,315 | 7,417 | 384,036 | 51.77 |
| Offshore | 258 | 2,375 | 436,424 | 9,205 | 1,691,564 | 183.76 |
| Total | 14,322 | 77,371 | 3,361,601 | 5,402 | 234,715 | 43.45 |
| Utah | 262 | 1,630 | 116,469 | 6,221 | 444,536 | 71.45 |
| Wyoming | 1,204 | 8,956 | 451,496 | 7,438 | 374,996 | 50.41 |
| Appalachian* | 5,053 | 16,673 | 388,454 | 3,299 | 76,875 | 23.30 |
| Gulf of Mexico** | 27 | 290 | 66,202 | 10,736 | 2,451,938 | 228.38 |
| Other States*** | 349 | 1,108 | 143,417 | 3,175 | 410,938 | 129.41 |
| TOTAL U.S. | 43,826 | 212,694 | 9,956,453 | 4,853 | 227,181 | 46.81 |

Source: Joint Association Survey.

*New York, Ohio, Pennsylvania, and West Virginia.

**Gulf of Mexico Northern is a new area designated by the Bureau of Land Management for federally controlled Outer Continental Shelf (OCS) waters not previously mapped or leased. The area covers Gulf of Mexico OCS waters off the states of Texas, Louisiana, Mississippi, Alabama, and Florida.

***Georgia, Idaho, Missouri, Nevada, South Dakota, Tennessee, Virginia, and Washington.



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# STRIPPER WELLS:

## Crude Oil Production From Stripper Wells (Thous. Bbls.)

| | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alabama | 0 | 0 | 0 | 0 | 0 | 26 | 46 | 87 | 117 | 162 | 139 |
| Arizona | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 4 | 5 | 6 | 7 |
| Arkansas | 7,921 | 7,738 | 7,863 | 7,719 | 7,239 | 7,282 | 6,659 | 6,748 | 5,044 | 5,199 | 6,172 |
| California | 59,349 | 55,640 | 45,624 | 51,738 | 58,245 | 65,531 | 61,452 | 77,497 | 60,574 | 52,246 | 51,410 |
| Colorado | 2,224 | 2,049 | 1,894 | 2,149 | 2,050 | 2,024 | 1,920 | 1,829 | 1,953 | 2,012 | 2,017 |
| Illinois | 59,175 | 54,699 | 49,887 | 42,861 | 38,304 | 33,128 | 29,827 | 26,024 | 25,215 | 24,936 | 23,614 |
| Indiana | 10,084 | 8,691 | 7,839 | 7,777 | 6,439 | 6,108 | 5,254 | 4,920 | 4,032 | 4,471 | 5,255 |
| Kansas | 64,296 | 63,149 | 59,441 | 55,835 | 51,857 | 50,448 | 45,949 | 44,615 | 43,707 | 44,433 | 44,190 |
| Kentucky | 10,605 | 10,038 | 9,305 | 11,301 | 10,531 | 9,128 | 7,314 | 6,464 | 6,183 | 6,173 | 5,421 |
| Louisiana | 11,002 | 10,204 | 9,443 | 8,467 | 8,078 | 7,599 | 7,325 | 7,502 | 7,574 | 8,176 | 7,740 |
| Michigan | 4,865 | 4,993 | 4,924 | 4,755 | 4,732 | 4,826 | 4,863 | 4,883 | 4,760 | 4,602 | 6,233 |
| Mississippi | 848 | 1,182 | 949 | 875 | 1,043 | 425 | 438 | 571 | 649 | 1,215 | 1,349 |
| Missouri | 75 | 65 | 67 | 66 | 66 | 59 | 60 | 56 | 57 | 60 | 60 |
| Montana | 4,731 | 5,062 | 6,265 | 7,454 | 1,919 | 1,910 | 2,144 | 2,024 | 3,579 | 2,947 | 3,255 |
| Nebraska | 756 | 893 | 1,012 | 1,056 | 1,191 | 1,122 | 1,196 | 1,379 | 1,545 | 1,758 | 2,012 |
| New Mexico | 10,512 | 10,565 | 10,674 | 10,202 | 10,187 | 10,075 | 10,224 | 10,835 | 11,082 | 11,141 | 11,547 |
| New York | 1,972 | 1,532 | 1,276 | 1,194 | 1,097 | 1,018 | 969 | 896 | 875 | 857 | 813 |
| North Dakota | 819 | 1,053 | 971 | 854 | 937 | 798 | 854 | 933 | 930 | 1,075 | 1,146 |
| Ohio | 5,362 | 6,162 | 6,583 | 6,905 | 5,800 | 6,551 | 6,157 | 6,362 | 6,705 | 6,996 | 7,251 |
| Oklahoma | 88,851 | 89,017 | 86,965 | 85,645 | 80,896 | 77,967 | 74,110 | 73,695 | 72,530 | 73,459 | 74,400 |
| Pennsylvania | 3,671 | 3,952 | 4,049 | 4,015 | 3,798 | 3,441 | 3,282 | 3,399 | 3,199 | 2,950 | 2,659 |
| South Dakota | 0 | 0 | 0 | 0 | 28 | 26 | 27 | 21 | 18 | 21 | 15 |
| Tennessee | 8 | 6 | 5 | 12 | 30 | 25 | 45 | 108 | 126 | 140 | 194 |
| Texas | 145,289 | 141,328 | 133,152 | 123,737 | 122,417 | 116,636 | 112,247 | 126,387 | 126,018 | 129,700 | 127,886 |
| Utah | 153 | 125 | 104 | 90 | 83 | 97 | 132 | 123 | 98 | 262 | 136 |
| Virginia | 3 | 3 | 1 | 1 | 1 | 0 | 0 | 3 | 3 | 3 | 2 |
| West Virginia | 3,526 | 3,532 | 3,073 | 3,124 | 2,969 | 2,677 | 2,407 | 2,673 | 2,478 | 2,400 | 2,384 |
| Wyoming | 3,504 | 3,483 | 3,454 | 3,455 | 3,382 | 2,996 | 1,785 | 1,898 | 5,107 | 4,791 | 5,225 |
| TOTAL U.S. | 499,601 | 485,161 | 454,820 | 441,287 | 423,322 | 411,924 | 385,684 | 411,936 | 394,163 | 392,191 | 392,532 |

## Number of Producing Stripper Wells As of December 31:

| | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Alabama | 0 | 0 | 0 | 0 | 0 | 14 | 39 | 44 | 75 | 71 | 78 |
| Arizona | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 4 | 6 | 7 | 7 |
| Arkansas | 5,326 | 5,243 | 5,927 | 5,997 | 5,961 | 6,203 | 6,201 | 6,094 | 6,100 | 6,025 | 6,736 |
| California | 25,398 | 21,343 | 18,904 | 21,395 | 23,753 | 31,391 | 31,466 | 34,559 | 32,124 | 29,983 | 28,328 |
| Colorado | 710 | 626 | 651 | 740 | 774 | 807 | 867 | 818 | 881 | 942 | 990 |
| Illinois | 27,735 | 27,127 | 26,600 | 26,095 | 25,202 | 24,363 | 23,960 | 23,279 | 23,222 | 23,275 | 23,499 |
| Indiana | 4,519 | 3,892 | 7,273 | 7,246 | 6,995 | 7,570 | 4,251 | 3,962 | 4,654 | 4,853 | 5,056 |
| Kansas | 40,597 | 40,540 | 40,599 | 39,851 | 40,513 | 39,552 | 40,176 | 40,176 | 40,597 | 41,764 | 42,273 |
| Kentucky | 11,615 | 11,000 | 10,500 | 14,615 | 14,585 | 14,511 | 14,201 | 13,914 | 13,690 | 13,817 | 14,046 |
| Louisiana | 12,853 | 13,079 | 12,973 | 12,561 | 12,318 | 12,907 | 12,649 | 12,808 | 12,723 | 13,185 | 13,189 |
| Michigan | 3,697 | 3,647 | 3,550 | 3,555 | 3,392 | 3,389 | 3,356 | 3,370 | 3,330 | 3,260 | 3,276 |
| Mississippi | 260 | 347 | 334 | 344 | 313 | 211 | 217 | 278 | 310 | 617 | 654 |
| Missouri | 146 | 128 | 161 | 126 | 139 | 137 | 137 | 157 | 163 | 173 | 161 |
| Montana | 2,403 | 2,178 | 1,745 | 1,951 | 1,311 | 1,186 | 1,295 | 1,338 | 1,873 | 1,918 | 1,945 |
| Nebraska | 338 | 389 | 373 | 437 | 484 | 417 | 526 | 577 | 638 | 812 | 919 |
| New Mexico | 9,038 | 9,100 | 9,224 | 9,058 | 9,143 | 9,122 | 9,458 | 9,991 | 10,274 | 10,544 | 10,956 |
| New York | 12,110 | 11,948 | 6,420 | 5,861 | 5,552 | 5,528 | 5,282 | 4,828 | 5,231 | 4,916 | 4,913 |
| North Dakota | 360 | 572 | 609 | 679 | 721 | 749 | 635 | 529 | 569 | 655 | 687 |
| Ohio | 13,388 | 13,986 | 14,202 | 14,447 | 14,653 | 14,863 | 14,906 | 15,406 | 15,482 | 15,586 | 16,122 |
| Oklahoma | 56,839 | 57,671 | 57,429 | 55,718 | 54,712 | 54,788 | 57,000 | 59,817 | 58,736 | 53,357 | 56,239 |
| Pennsylvania | 43,925 | 38,264 | 37,625 | 36,801 | 34,029 | 32,596 | 31,539 | 32,095 | 31,661 | 31,274 | 28,400 |
| South Dakota | 0 | 0 | 0 | 0 | 11 | 12 | 12 | 8 | 9 | 10 | 16 |
| Tennessee | 32 | 28 | 30 | 44 | 46 | 41 | 53 | 99 | 133 | 159 | 213 |
| Texas | 89,985 | 90,353 | 88,579 | 85,117 | 84,950 | 83,666 | 82,302 | 87,412 | 89,027 | 91,498 | 92,887 |
| Utah | 78 | 55 | 38 | 37 | 44 | 53 | 84 | 74 | 48 | 77 | 74 |
| Virginia | 4 | 5 | 5 | 3 | 3 | 1 | 0 | 3 | 7 | 7 | 4 |
| West Virginia | 12,859 | 12,919 | 13,001 | 13,150 | 13,270 | 13,375 | 13,500 | 13,600 | 13,680 | 13,800 | 13,875 |
| Wyoming | 2,693 | 2,706 | 2,646 | 2,640 | 1,811 | 1,716 | 1,116 | 926 | 2,629 | 3,148 | 3,387 |
| TOTAL U.S. | 376,851 | 367,205 | 358,650 | 359,130 | 353,696 | 359,471 | 355,229 | 366,095 | 367,872 | 365,733 | 368,930 |

Source: Interstate Oil Compact Commission and National Stripper Well Association.

# United States Crude Oil Production — 1969-1978

(THOUSANDS OF BARRELS DAILY)

| | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
|---|---|---|---|---|---|---|---|---|---|---|
| Florida | 4.7 | 8.2 | 14.7 | 46.2 | 89.6 | 99.6 | 114.7 | 121.5 | 127.8 | 130.2 |
| New York | 3.4 | 3.3 | 3.1 | 2.8 | 2.6 | 2.5 | 2.4 | 2.3 | 2.3 | 1.6 |
| Pennsylvania | 12.2 | 11.2 | 10.4 | 9.4 | 9.0 | 9.5 | 9.0 | 8.3 | 7.4 | 8.5 |
| Virginia | * | * | * | * | * | * | * | * | * | * |
| West Virginia | 8.5 | 8.6 | 8.1 | 7.3 | 6.5 | 7.3 | 6.8 | 6.9 | 6.9 | 6.3 |
| P.A.D. Dist. I | 28.8 | 31.3 | 36.3 | 65.7 | 107.7 | 118.9 | 132.8 | 138.9 | 144.4 | 146.6 |
| Illinois | 139.0 | 119.9 | 107.1 | 95.3 | 84.0 | 75.5 | 71.4 | 71.8 | 70.2 | 65.0 |
| Indiana | 21.5 | 20.5 | 18.2 | 16.7 | 14.6 | 13.5 | 12.7 | 12.7 | 14.6 | 13.1 |
| Kansas | 243.1 | 232.5 | 215.2 | 201.5 | 181.5 | 169.0 | 161.9 | 160.4 | 157.5 | 155.0 |
| Kentucky | 35.4 | 31.7 | 29.3 | 26.5 | 23.8 | 21.5 | 20.7 | 20.4 | 18.0 | 15.7 |
| Michigan | 33.5 | 32.0 | 32.6 | 35.5 | 40.0 | 49.4 | 66.9 | 83.1 | 90.3 | 94.9 |
| Nebraska | 33.2 | 31.4 | 27.6 | 23.8 | 19.8 | 18.1 | 16.8 | 16.9 | 16.4 | 16.0 |
| North Dakota | 62.2 | 60.3 | 59.3 | 56.3 | 55.4 | 54.0 | 56.0 | 59.4 | 63.8 | 67.9 |
| Ohio | 30.1 | 27.0 | 22.7 | 25.6 | 24.1 | 24.9 | 26.2 | 27.3 | 28.4 | 35.5 |
| Oklahoma | 615.7 | 612.5 | 584.4 | 567.3 | 523.8 | 487.1 | 446.9 | 441.0 | 428.4 | 412.2 |
| South Dakota | 0.4 | 0.4 | 0.6 | 0.6 | 0.8 | 1.3 | 1.3 | 1.2 | 1.7 | 2.4 |
| Other[1] | 0.3 | 1.1 | 1.3 | 0.7 | 0.8 | 2.2 | 2.0 | 1.8 | 2.2 | 1.9 |
| P.A.D. Dist. II | 1,214.4 | 1,169.3 | 1,098.3 | 1,049.8 | 968.6 | 916.5 | 882.8 | 896.0 | 891.7 | 879.6 |
| Alabama | 21.1 | 19.9 | 21.5 | 27.2 | 32.0 | 36.5 | 36.9 | 40.2 | 50.0 | 52.3 |
| Arkansas | 49.4 | 49.4 | 50.0 | 50.6 | 49.4 | 45.3 | 44.2 | 49.4 | 55.3 | 55.7 |
| Louisiana | 2,314.0 | 2,484.7 | 2,436.7 | 2,436.7 | 2,278.1 | 2.020.0 | 1,783.1 | 1,657.1 | 1,542.2 | 1,465.0 |
| Gulf | 2,181.0 | 2,355.0 | 2,315.7 | 2,315.7 | 2,169.2 | 1,913.7 | 1,680.8 | 1,552.7 | 1,441.1 | 1,370.7 |
| Other | 133.0 | 129.7 | 124.4 | 121.0 | 108.9 | 106.3 | 102.3 | 104.4 | 101.1 | 94.3 |
| Mississippi | 176.1 | 178.4 | 175.5 | 166.9 | 153.7 | 139.1 | 127.7 | 125.9 | 117.9 | 108.2 |
| New Mexico | 354.0 | 351.2 | 324.4 | 302.0 | 276.7 | 270.4 | 260.5 | 251.7 | 239.0 | 227.7 |
| Texas | 3,155.5 | 3,423.8 | 3,350.5 | 3,556.5 | 3,547.0 | 3,457.9 | 3,347.8 | 3,250.0 | 3,117.5 | 2,942.0 |
| P.A.D. Dist. III | 6,070.1 | 6,507.4 | 6,539.4 | 6,539.9 | 6,336.9 | 5,969.2 | 5,600.2 | 5,374.4 | 5,121.9 | 4,850.9 |
| Colorado | 77.5 | 67.7 | 75.0 | 87.5 | 100.2 | 102.8 | 104.4 | 106.5 | 108.1 | 100.7 |
| Montana | 120.4 | 103.8 | 94.8 | 92.6 | 94.8 | 94.7 | 90.0 | 89.7 | 89.5 | 83.4 |
| Utah | 63.8 | 64.0 | 64.7 | 72.6 | 89.5 | 107.8 | 115.9 | 93.7 | 90.7 | 82.4 |
| Wyoming | 424.5 | 439.3 | 405.8 | 382.5 | 388.8 | 383.5 | 372.5 | 366.5 | 373.9 | 374.8 |
| P.A.D. Dist. IV | 686.2 | 674.8 | 640.3 | 635.2 | 673.3 | 688.8 | 682.7 | 656.4 | 662.2 | 641.3 |
| Alaska | 202.6 | 299.1 | 217.8 | 199.2 | 198.1 | 193.4 | 191.3 | 173.2 | 463.6 | 1,226.9 |
| Arizona | 6.7 | 4.9 | 3.4 | 2.7 | 2.2 | 2.0 | 1.7 | 1.4 | 1.2 | 1.1 |
| California | 1,028.2 | 1,019.7 | 982.1 | 948.2 | 920.8 | 885.0 | 882.7 | 890.8 | 957.8 | 951.5 |
| Nevada | 0.6 | 0.4 | 0.3 | 0.2 | 0.3 | 0.4 | 0.3 | 0.4 | 1.8 | 3.3 |
| P.A.D. Dist. V | 1,238.1 | 1,254.1 | 1,203.6 | 1,150.3 | 1,121.4 | 1,080.8 | 1,076.0 | 1,065.8 | 1,424.4 | 2,182.8 |
| TOTAL U.S. | 9,237.6 | 9,636.9 | 9,462.8 | 9,440.9 | 9,207.9 | 8,774.2 | 8,374.7 | 8,131.6 | 8,244.6 | 8,701.2 |

*Less than 100 barrels daily.

[1] Missouri and Tennessee.

Source: Energy Informaton Administration.

# Petroleum Production and New Reserves Found

## All Time to December 31, 1978

| | Total Liquid Petroleum (Thous. Bbls.) | | | Natural Gas (Mil. Cub. Ft.) | | |
|---|---|---|---|---|---|---|
| | Found | Produced | Proved Reserves Dec. 31, 78 | Found | Produced | Proved Reserves Dec. 31, 78 |
| Florida | 501,570 | 310,719 | 190,851 | 435,224 | 274,928 | 160,296 |
| Maryland | 0 | 0 | 0 | 263,976* | 60,433* | 203,543* |
| New York | 228,490 | 219,494 | 8,996 | 827,689 | 564,978 | 262,711 |
| Pennsylvania | 1,359,168 | 1,310,689 | 48,479 | 11,297,005 | 9,203,489 | 2,093,516 |
| Virginia | 288* | 288* | 0 | 178,120 | 99,056 | 79,064 |
| West Virginia | 873,920 | 747,966 | 125,954 | 17,744,130 | 15,060,994 | 2,683,136 |
| P.A.D. Dist. I | 2,963,436 | 2,539,156 | 374,280 | 30,746,144 | 25,263,878 | 5,482,266 |
| Illinois | 3,359,336 | 3,221,409 | 137,927 | 1,879,070 | 1,458,633 | 420,437 |
| Indiana | 490,647 | 464,132 | 26,515 | 227,409 | 170,699 | 56,710 |
| Kansas | 6,238,372 | 5,424,244 | 814,128 | 37,362,677 | 25,075,336 | 12,287,341 |
| Kentucky | 817,482 | 746,396 | 71,086 | 4,089,610 | 3,370,681 | 718,929 |
| Michigan | 1,056,899 | 801,042 | 255,857 | 2,854,808 | 1,086,227 | 1,768,581 |
| Missouri | 2,781* | 2,076* | 705* | 2,483* | 980* | 1,503* |
| Nebraska | 416,403 | 386,655 | 29,748 | 382,350 | 309,511 | 72,839 |
| North Dakota | 789,304 | 573,965 | 215,339 | 1,244,952 | 833,467 | 411,485 |
| Ohio | 981,760 | 850,566 | 131,194 | 7,058,032 | 5,497,554 | 1,560,478 |
| Oklahoma | 14,786,600 | 13,444,461 | 1,342,139 | 60,661,317 | 49,198,026 | 11,463,291 |
| South Dakota | 8,883 | 6,145 | 2,738 | 500* | 300* | 200* |
| Tennessee | 7,913 | 5,424 | 2,489 | 14,609* | 3,409* | 11,200* |
| P.A.D. Dist. II | 28,956,380 | 25,926,515 | 3,029,865 | 115,777,817 | 87,004,823 | 28,772,994 |
| Alabama | 471,574 | 234,402 | 237,172 | 950,305 | 199,086 | 751,219 |
| Arkansas | 1,640,886 | 1,541,487 | 99,399 | 5,020,487 | 3,393,423 | 1,627,064 |
| Louisiana | 25,748,493 | 21,539,547 | 4,208,946 | 194,429,430 | 144,755,282 | 49,674,148 |
| Mississippi | 1,947,295 | 1,747,001 | 200,294 | 6,707,751 | 5,297,237 | 1,410,514 |
| New Mexico | 6,485,448 | 5,548,136 | 937,312 | 43,304,272 | 30,042,783 | 13,261,489 |
| Texas | 62,704,141 | 52,745,866 | 9,958,275 | 272,003,136 | 217,402,901 | 54,600,235 |
| P.A.D. Dist. III | 98,997,837 | 83,356,439 | 15,641,398 | 522,415,381 | 401,090,712 | 121,324,669 |
| Colorado | 1,582,531 | 1,323,320 | 259,211 | 5,143,870 | 3,178,105 | 1,965,765 |
| Montana | 1,154,636 | 1,010,871 | 143,765 | 2,688,428 | 1,696,760 | 991,668 |
| Utah | 884,417 | 697,332 | 187,085 | 2,017,860 | 1,319,205 | 698,655 |
| Wyoming | 5,517,513 | 4,661,004 | 856,409 | 12,642,830 | 8,327,055 | 4,315,775 |
| P.A.D. Dist. IV | 9,138,997 | 7,692,527 | 1,446,470 | 22,492,988 | 14,521,125 | 7,971,863 |
| Alaska** | 11,024,983 | 1,369,836 | 9,655,147 | 33,302,735 | 1,690,440 | 31,612,295 |
| Arizona | 24,586* | 17,034* | 7,552* | 59,723* | 17,185* | 42,538* |
| California | 22,782,212 | 19,208,590 | 3,573,622 | 33,279,946 | 28,184,864 | 5,095,082 |
| Nevada | 5,988* | 4,710* | 1,278* | 0 | 0 | 0 |
| P.A.D. Dist. V | 33,837,769 | 20,600,170 | 13,237,599 | 66,642,404 | 29,924,489 | 36,749,914 |
| Miscellaneous | 0 | 0 | 0 | 2,019 | 2,019 | 0 |
| TOTAL U.S. | 173,894,419 | 140,164,807 | 33,729,612 | 758,076,753 | 557,775,046 | 200,301,707 |

*Estimated.
**Includes Alaskan North Slope.
Source: American Petroleum Institute & American Gas Association.

South Texas energy.
We're helping turn it on.

*Seated: (L to R) Charles D. Schutz, Paul R. Clevenger.*
*Standing: (L to R) W. Therrell Powell, Charles F. Dwyer, James M. Wright, Randolph P. Freeman, Frances K. Surber.*

That's what gets things moving. Oil. Gas. Uranium. Coal. Tapped and untapped energy resources of Texas. The Country depends on them. And we're involved. In development, recompletion, gathering systems, property acquisition, and mineral processing. Charles D. Schutz, Senior Vice President and Petroleum Engineer, heads our fully-staffed Petroleum and Mineral Division...a major factor in energy development for seventeen years. Refined energy from raw resources. It doesn't just happen. It takes a bank to help turn it on.

**National Bank of Commerce of San Antonio**

*Member National Bancshares Corporation of Texas*

*P.O. DRAWER 121, SAN ANTONIO, TEXAS 78291 (512) 225-2511 MEMBER FDIC*

## 1978 RANK OF STATES IN CRUDE OIL PRODUCTION

| State (Rank) | Percent of Production |
|---|---|
| Texas (1) | 33.8 |
| Louisiana (2) | 16.8 |
| Alaska (3) | 14.1 |
| California (4) | 10.9 |
| Oklahoma (5) | 4.7 |
| Wyoming (6) | 4.3 |
| New Mexico (7) | 2.6 |
| Kansas (8) | 1.7 |
| Florida (9) | 1.4 |
| Mississippi (10) | 1.2 |
| Colorado (11) | 1.1 |
| Michigan (12) | 1.0 |
| Montana (13) | 0.9 |
| Utah (14) | 0.9 |
| North Dakota (15) | 0.7 |
| Illinois (16) | 0.7 |
| Arkansas (17) | 0.6 |
| Alabama (18) | 0.6 |
| Ohio (19) | 0.4 |
| Nebraska (20) | 0.1 |
| Kentucky (21) | 0.1 |
| Indiana (22) | 0.1 |
| Pennsylvania (23) | |
| West Virginia (24) | |
| Nevada (25) | |
| South Dakota (26) | |
| Tennessee (27) | >0.1 |
| New York (28) | |
| Arizona (29) | |
| Mississippi (30) | |
| Virginia (31) | |

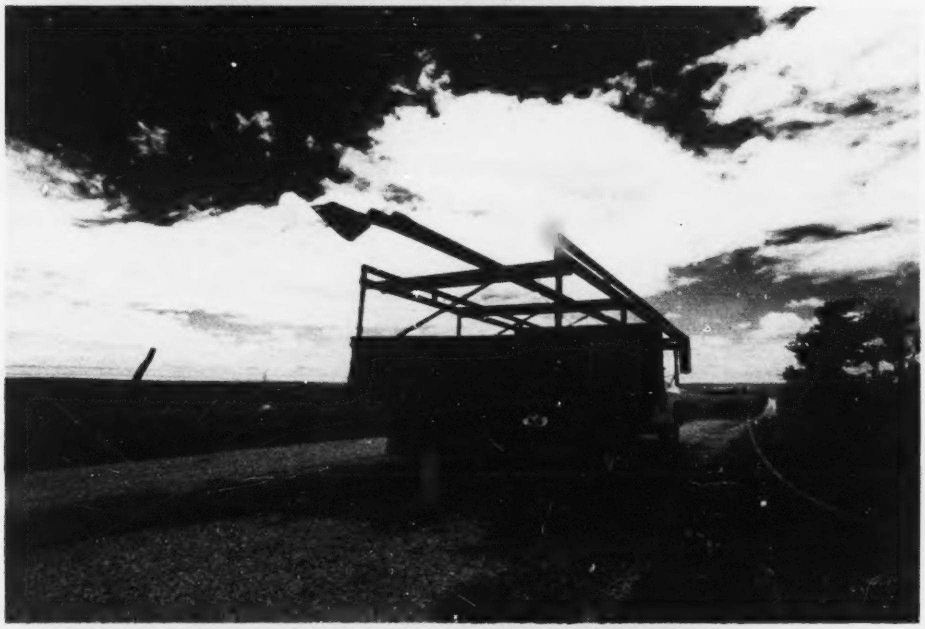
> = Less than.
Source: DOE.

## U.S. Drilling Costs Indices

| | Cost indices (1967 = 100) | | | Drilling costs | | |
|---|---|---|---|---|---|---|
| Year | Oil field machinery | Oil well casing | Oil field wages | Total (Thous.) | Per well | Per foot |
| 1959 | 91.3 | 91.6 | 81.5 | 2,851,000 | 53,000 | 12.90 |
| 1960 | 91.3 | 91.6 | 82.8 | 2,425,000 | 54,800 | 13.01 |
| 1961 | 92.7 | 89.5 | 86.2 | 2,398,162 | 54,500 | 12.85 |
| 1962 | 94.0 | 88.0 | 87.1 | 2,576,675 | 58,635 | 13.31 |
| 1963 | 93.3 | 88.8 | 88.9 | 2,302,864 | 55,023 | 12.69 |
| 1964 | 94.8 | 91.9 | 90.8 | 2,427,367 | 55,820 | 12.86 |
| 1965 | 95.2 | 96.2 | 93.2 | 2,401,437 | 60,848 | 13.44 |
| 1966 | 96.5 | 96.2 | 96.2 | 2,390,740 | 68,386 | 14.95 |
| 1967 | 100.0 | 100.0 | 100.0 | 2,290,178 | 72,902 | 15.97 |
| 1968 | 106.4 | 101.5 | 104.0 | 2,409,380 | 81,463 | 16.83 |
| 1969 | 112.7 | 104.5 | 110.5 | 2,610,671 | 88,554 | 17.56 |
| 1970 | 118.4 | 109.1 | 117.8 | 2,578,682 | 94,885 | 18.84 |
| 1971 | 122.6 | 120.7 | 129.0 | 2,371,482 | 94,708 | 19.03 |
| 1972 | 127.3 | 128.4 | 137.2 | 2,814,105 | 106,224 | 20.76 |
| 1973 | 133.2 | 133.2 | 147.7 | 3,074,532 | 117,152 | 22.50 |
| 1974 | 157.8 | 170.7 | 164.0 | 4,386,969 | 136,718 | 28.93 |
| 1975 | 196.3 | 211.5 | 186.2 | 6,571,214 | 177,793 | 36.99 |
| 1976 | 217.6 | 223.0 | 202.8 | 7,481,880 | 191,615 | 40.48 |
| 1977 | 236.5 | 244.3 | 219.4 | 9,986,453 | 227,181 | 46.81 |
| 1978 | 261.2 | 271.8 | 249.8 | N.A. | N.A. | N.A. |

Source: Cost indices from U.S. Bureau of Labor Statistics and Drilling Costs from Joint Association Survey.

# TWO JOINTS OF 2$\frac{3}{8}$-IN. API THREAD TUBING...



# FOR US, THAT'S AN ORDER WORTH HUSTLING FOR.

Even though that order may not mean much to a major mill, it's important to you. And to us at Fort Worth Pipe & Supply. Because we're not big enough to be particular about the size of an order.

That's why we'll hustle to get you to place even the smallest orders with us.

We've been an oil country tubular goods distributor for 25 years. We've made it our business to provide the pipe you need when and where you need it at a price that's right. Which is what we mean by hustle.

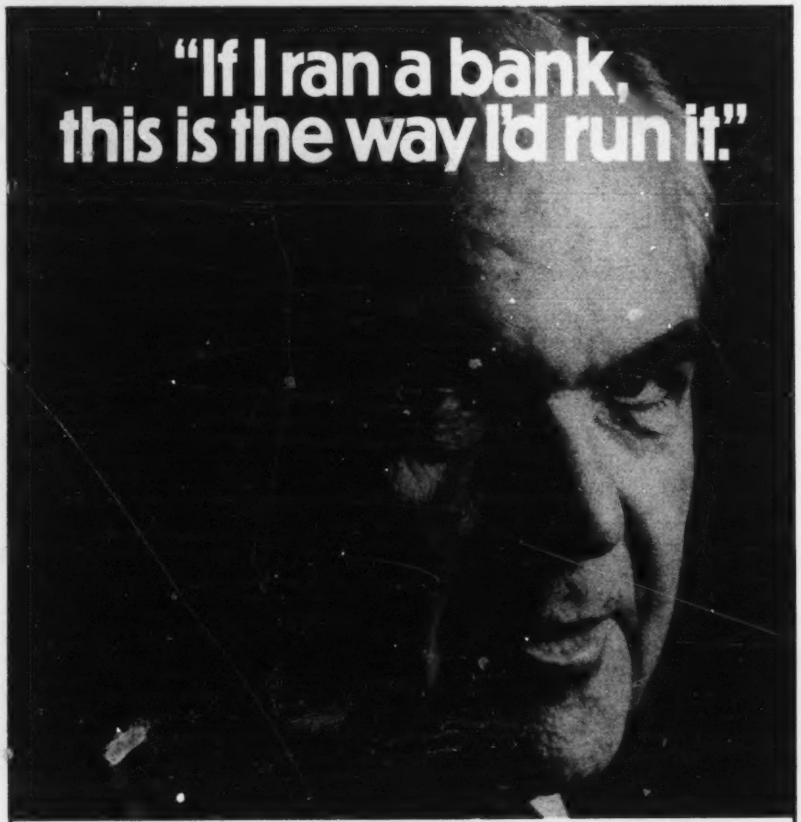
With our new pipe mill in Conroe, Texas, we'll have even more to hustle with. The mill gives us an assured, constant supply of the most popular grades and sizes of tubular goods from 2⅜-in. to 8⅝-in. diam. That's in addition to the regular inventories we maintain.

You can call us for almost any pipe need — from a joint or two to enough to equip several wells and lay the gathering lines. In either case, you know we'll hustle to get and fill the order.

**To make a living, we simply have to outhustle the majors.**

**Whittaker**

**Fort Worth Pipe & Supply Division**
Whittaker Corporation
3128 W. Bolt Street/Box 2108
Fort Worth, Texas 76113
817/921-6261 Telex 758224


"If I ran a bank,
this is the way I'd run it."

**Morris Porter, President and Chief Executive Officer, AMPECO.**

*"At American Public Energy Company, we sponsor oil and gas public drilling programs throughout North America which require a substantial amount of capital. Yet, our primary bank is not a large, downtown bank. After all, it's not the bank loan – money is all about the same – it's the in-house servicing capabilities that count. We work with Phil Sawyer at NorthPark National Bank. He understands the technicalities of our industry and even goes with us on business trips as needed.*

*"Having an expert to serve this important group of customers, that's the way I'd run a bank."*

NorthPark
National Bank
NorthPark Center Dallas, Texas 75225
(214) 363-9191
MEMBER FDIC

## FINANCIAL DATA

| | Rate of return (%) | | Exploration and development outlays (Million dollars) | | |
|---|---|---|---|---|---|
| Year | U.S. oil companies | All mfg. companies | Larger companies | Independents | Total |
| 1970 | 9.9 | 9.3 | 3,119 | 1,656 | 4,775 |
| 1971 | 9.3 | 9.7 | 2,740 | 1,160 | 3,900 |
| 1972 | 9.6 | 10.6 | 4,225 | 2,255 | 6,480 |
| 1973 | 10.5 | 13.0 | 5,275 | 2,865 | 8,140 |
| 1974 | 14.6 | 14.9 | 8,550 | 3,905 | 12,355 |
| 1975 | 12.9 | 11.6 | 6,830 | 3,420 | 10,250 |
| 1976 | 15.2 | 13.9 | 8,646 | 5,864 | 14,510 |
| 1977 | 14.2 | 14.2 | 10,305 | 6,195 | 16,500 |

Source: Chase Manhattan Bank and Federal Trade Commission.

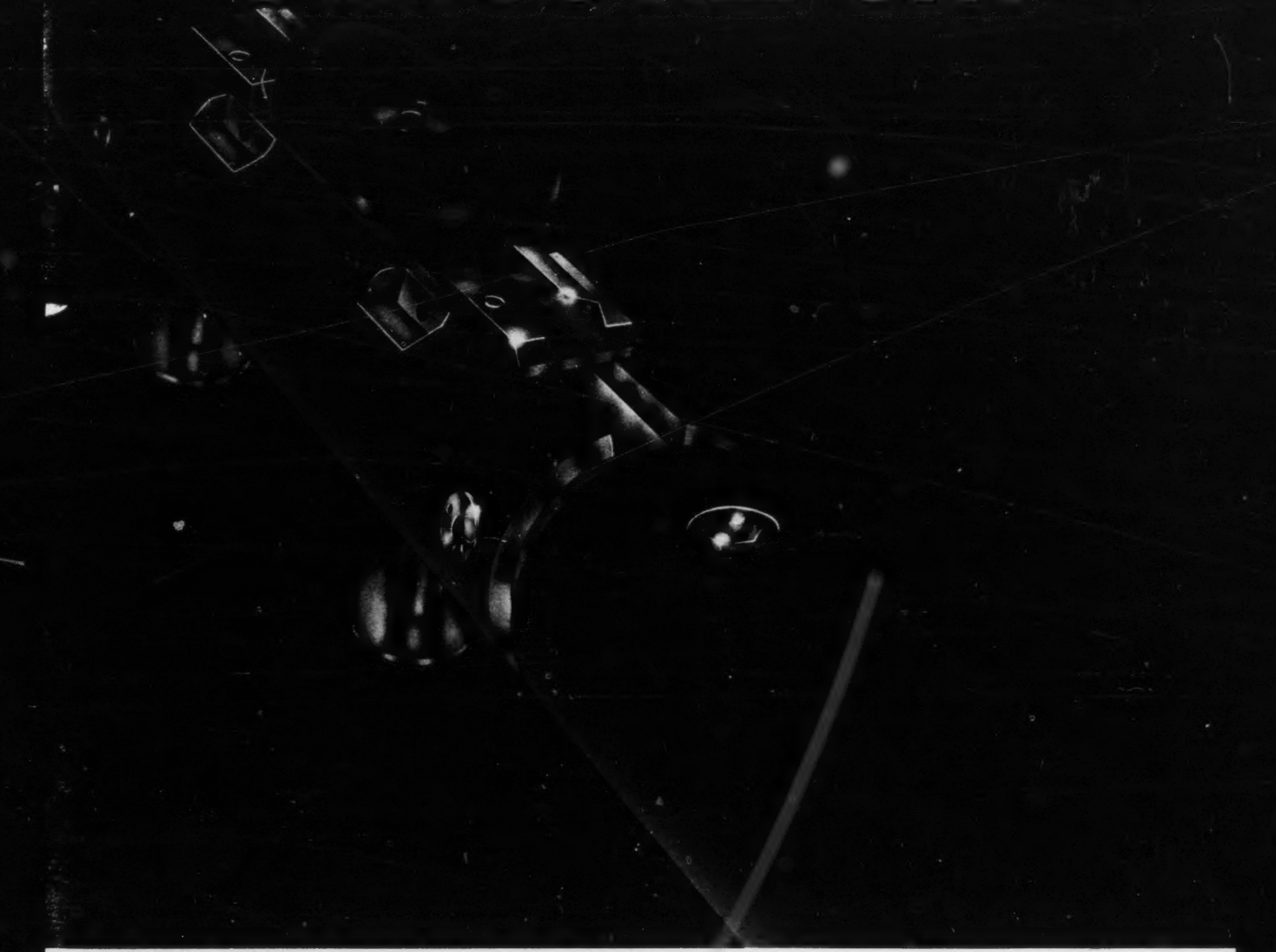
## 1978 Consumption of Motor Gasoline

(Thousand Barrels)

| | |
|---|---|
| Alabama | 51,933 |
| Alaska | 4,979 |
| Arizona | 33.599 |
| Arkansas | 31,674 |
| California | 283,295 |
| Colorado | 38,231 |
| Connecticut | 34,116 |
| Delaware | 7,439 |
| Florida | 117,374 |
| Georgia | 74,062 |
| Hawaii | 7,917 |
| Idaho | 13,422 |
| Illinois | 139,276 |
| Indiana | 71,548 |
| Iowa | 43,509 |
| Kansas | 34,619 |
| Kentucky | 46,224 |
| Louisiana | 51,523 |
| Maine | 13,954 |
| Maryland | 48,757 |
| Massachusetts | 58,708 |
| Michigan | 120,044 |
| Minnesota | 55,053 |
| Mississippi | 31,671 |
| Missouri | 70,156 |
| Montana | 13,274 |
| Nebraska | 22,831 |
| Nevada | 12,136 |
| New Hampshire | 10,842 |
| New Jersey | 83,546 |
| New Mexico | 19,565 |
| New York | 147,678 |
| North Carolina | 77,599 |
| North Dakota | 11,139 |
| Ohio | 131,209 |
| Oklahoma | 47,726 |
| Oregon | 33,498 |
| Pennsylvania | 124,262 |
| Rhode Island | 9,479 |
| South Carolina | 41,064 |
| South Dakota | 11,822 |
| Tennessee | 61,504 |
| Texas | 207,887 |
| Utah | 18,142 |
| Vermont | 6,410 |
| Virginia | 68,117 |
| Washington | 48,585 |
| West Virginia | 21,584 |
| Wisconsin | 57,958 |
| Wyoming | 9,255 |
| District of Columbia | 5,353 |
| Total U.S. | 2,785,547 |

Source: Department of Transportation.

# STATUS REPORT



**At Gearhart-Owen, we've made a commitment to the oil industry to do everything we can to reduce rig time.**

---

Anyone who has ever worked at a rig site knows there's nothing magical about well logging. No one tool can do it all. But Gearhart-Owen's new Selective Formation Tester can give you more of the information you need. It can give you an up-to-the-second "status report", providing you with critical, firsthand knowledge, so you can make accurate dollars and cents decisions.

Through the application of advanced technology, our new Selective Formation Tester retrieves 2¼ or 5 gallon formation fluid samples. And because of sophisticated engineering, it maximizes accuracy, while minimizing potential problems.

The tool gathers the information needed and reports the status through Gearhart-Owen's exclusive Direct Digital Logging® (DDL)® system. The system delivers that information to you by printing out the actual pressure figures, making it easier to analyze the log. Introduced in 1975, the DDL system takes all information sent by any downhole tool and sends it directly to a computer where it is processed and displayed instantly.

Combining today's technology with twenty-five years of Gearhart-Owen experience, GO gives you an up-to-the-second "status report" so you know exactly what is happening downhole. And a computer-based system on board the truck, designed to instantly collect and process the information the tools transmit.

**Going all out to remove any guesswork from well logging.**

**WIRELINE SERVICES**

**GOING ALL OUT**

**Gearhart-Owen Industries, Inc.**
Box 1936 Fort Worth, Texas 76101

# Estimated Average Number of Employees in Important Segments of the Petroleum Industry in 1978

| | MINING | MANUFACTURING | | TRANSPORTATION | | WHOLE-SALE | RETAIL | |
|---|---|---|---|---|---|---|---|---|
| | Crude Oil and Natural Gas Extraction | Petroleum Refining | Lubricating Oils and Greases | Pipelines (Except Natural Gas) | Gas Production and Distribution | Petroleum and Petroleum Products | Gasoline Service Stations | TOTAL |
| Alabama | 1,411 | 347 | N.D. | 87 | 2,453 | 4,130 | 8,522 | 16,950 |
| Alaska | 5,200 | * | 200 | * | 1,600 | 350 | 1,050 | 8,400 |
| Arizona | 62 | * | 40 | 91 | 624 | 1,398 | 7,130 | 9,345 |
| Arkansas | 2,533 | 746 | 0 | 314 | 2,288 | 2,612 | 5,375 | 13,868 |
| California | 27,314 | 23,520 | 678 | 592 | 9,370 | 3,198 | 65,689 | 130,361 |
| Colorado | 12,400 | 464 | 16 | 143 | 1,972 | 2,590 | 9,768 | 27,353 |
| Connecticut | 230 | 0 | 120 | 20 | 1,260 | 2,680 | 9,680 | 13,990 |
| Delaware | 178 | 950 | 9 | 0 | 364 | 435 | 1,650 | 3,586 |
| Florida | 540 | 147 | N.D. | 60 | 1,967 | 6,806 | 28,866 | 38,386 |
| Georgia | 47 | 96 | 93 | 457 | 3,624 | 7,308 | 15,216 | 26,841 |
| Hawaii | N.A. | 282 | N.A. | N.A. | 342 | 266 | 3,330 | 4,220 |
| Idaho | 165 | 0 | 0 | 14 | 491 | 1,477 | 2,486 | 4,633 |
| Illinois | 5,866 | 12,528 | 764 | 1,121 | 8,763 | 11,098 | 32,645 | 72,785 |
| Indiana | 600 | 3,300 | 300 | 400 | 3,100 | 4,700 | 18,200 | 30,600 |
| Iowa | 35 | 0 | 76 | 229 | 1,157 | 4,090 | 13,151 | 18,738 |
| Kansas | 10,664 | 3,908 | 539 | 1,734 | 4,624 | 2,877 | 8,431 | 32,777 |
| Kentucky | 2,383 | N.D. | N.D. | 176 | 2,733 | 3,199 | 11,741 | 20,232 |
| Louisiana | 69,000 | 10,600 | N.A. | 1,000 | 5,600 | * | 15,400 | 101,600 |
| Maine | N.D. | 0 | 0 | N.D. | N.D. | 1,317 | 2,866 | 4,183 |
| Maryland | 51 | 0 | 179 | 0 | 2,193 | 4,463 | 13,130 | 20,016 |
| Massachusetts | 21 | 315 | 139 | 9 | 4,652 | 3,305 | 15,425 | 23,866 |
| Michigan | 3,570 | 2,173 | 416 | 237 | 8,566 | 8,446 | 23,162 | 46,570 |
| Minnesota | 197 | 904 | N.D. | 213 | 2,514 | 4,267 | 17,016 | 25,111 |
| Mississippi | 7,612 | 1,176 | N.D. | 159 | 2,151 | 3,324 | 5,131 | 19,553 |
| Missouri | 110 | N.D. | 320 | 260 | 4,700 | 7,290 | 16,710 | 29,390 |
| Montana | 2,789 | 1,081 | 0 | 107 | 111 | 1,576 | 3,174 | 8,838 |
| Nebraska | 647 | 54 | 162 | 173 | 3,139 | 1,699 | 7,169 | 13,043 |
| Nevada | 309 | 61 | 2 | 22 | 410 | 528 | 3,533 | 4,865 |
| New Hampshire | 11 | 0 | 0 | 4 | 289 | 695 | 2,660 | 3,659 |
| New Jersey | 74 | 8,254 | 1,075 | 147 | 1,777 | 4,887 | 19,588 | 35,802 |
| New Mexico | 9,872 | 1,331 | N.D. | 200 | 3,498 | 1,512 | 4,548 | 20,961 |
| New York | 2,086 | 10,490 | 350 | 106 | 6,898 | 14,227 | 32,784 | 66,941 |
| North Carolina | 20 | 0 | 2 | 53 | 2,170 | 8,000 | 12,000 | 22,245 |
| North Dakota | 3,050 | 290 | 0 | 70 | 10 | 2,320 | 2,580 | 8,320 |
| Ohio | 7,787 | 10,756 | 706 | 678 | 7,865 | 6,147 | 33,617 | 67,556 |
| Oklahoma | 50,993 | 7,504 | 247 | 2,006 | 4,800 | 7,042 | 6,737 | 79,329 |
| Oregon | 36 | 0 | 14 | N.D. | 1,253 | 2,493 | 8,393 | 12,189 |
| Pennsylvania | 3,495 | 12,935 | 1,543 | 740 | 11,307 | 12,267 | 32,392 | 74,679 |
| Rhode Island | 68 | 0 | 0 | 0 | 824 | 821 | 2,315 | 4,028 |
| South Carolina | N.D. | 0 | N.D. | N.D. | 446 | 3,774 | 7,527 | 11,747 |
| South Dakota | 193 | 21 | 0 | 61 | 138 | 1,575 | 3,335 | 5,323 |
| Tennessee | 323 | 274 | 27 | 46 | 1,564 | 4,609 | 13,974 | 20,817 |
| Texas | 175,702 | 40,853 | 281 | 5,045 | 25,571 | 26,251 | 34,670 | 308,373 |
| Utah | 3,367 | 834 | 6 | 92 | 2,213 | 1,518 | 4,732 | 12,762 |
| Vermont | 0 | 0 | 11 | 0 | 133 | 356 | 1,682 | 2,182 |
| Virginia | 100 | 300 | 0 | 175 | 2,200 | 6,750 | 16,100 | 25,625 |
| Washington | 92 | 1,602 | 63 | 78 | 1,413 | 3,332 | 9,946 | 16,526 |
| West Virginia | 3,400 | 4,400 | 0 | 100 | 5,500 | 2,000 | 5,000 | 20,400 |
| Wisconsin | 29 | 156 | 173 | 138 | 3,028 | 5,307 | 14,945 | 23,776 |
| Wyoming | 14,098 | 1,583 | 0 | 350 | 772 | 933 | 3,184 | 20,920 |
| Dist. of Columbia | 30 | 100 | 0 | 0 | 710 | 590 | 1,460 | 2,890 |
| TOTAL U.S. | 428,760 | 164,335 | 8,551 | 17,707 | 165,147 | 212,835 | 639,815 | 1,637,150 |

*Included in next column.
N.D. Non-Disclosure.
N.A. Not Available.
Source: State Agencies cooperating with Bureau of Labor Statistics.

# Estimated Consumption of Petroleum Products — 1977

(THOUSAND BARRELS)

| | Motor Gaoline | Aviation Fuels* | Middle Distillates | Residual Fuel Oil | L.P.G. | All Other | Total |
|---|---|---|---|---|---|---|---|
| Alabama | 49,976 | 1,175 | 19,586 | 15,181 | 6,416 | 21,025 | 113,359 |
| Alaska | 5,294 | 6,351 | 10,187 | 1,738 | 410 | 5,457 | 29,437 |
| Arizona | 31,692 | 3,740 | 13,727 | 7,478 | 946 | 13,107 | 70,690 |
| Arkansas | 30,674 | 573 | 12,406 | 18,096 | 9,048 | 16,116 | 86,913 |
| California | 269,771 | 44,783 | 54,805 | 180,648 | 11,042 | 127,728 | 688,777 |
| Colorado | 35,029 | 6,999 | 9,758 | 3,502 | 4,717 | 13,655 | 73,660 |
| Connecticut | 33,739 | 1,809 | 23,249 | 32,183 | 2,299 | 21,229 | 114,508 |
| Delaware | 7,457 | 115 | 5,191 | 10,518 | 772 | 5,469 | 29,522 |
| Florida | 111,159 | 20,535 | 28,339 | 85,323 | 8,893 | 57,885 | 312,134 |
| Georgia | 71,487 | 11,938 | 23,739 | 11,662 | 7,566 | 28,777 | 155,169 |
| Hawaii | 7,638 | 11,002 | 3,502 | 11,910 | 879 | 7,956 | 42,887 |
| Idaho | 12,624 | 485 | 7,868 | 669 | 1,210 | 5,202 | 28,058 |
| Illinois | 129,933 | 22,463 | 58,459 | 27,293 | 22,843 | 59,414 | 320,405 |
| Indiana | 69,578 | 1,804 | 37,929 | 18,621 | 15,909 | 32,742 | 176,583 |
| Iowa | 43,626 | 1,039 | 15,752 | 764 | 15,759 | 17,518 | 94,458 |
| Kansas | 34,468 | 1,052 | 12,123 | 6,104 | 9,039 | 14,293 | 77,079 |
| Kentucky | 44,980 | 2,059 | 16,845 | 2,406 | 5,630 | 16,371 | 88,291 |
| Louisiana | 49,525 | 3,523 | 32,771 | 51,166 | 5,295 | 32,385 | 174,665 |
| Maine | 13,709 | 886 | 14,376 | 11,731 | 1,178 | 9,537 | 51,417 |
| Maryland | 47,030 | 2,060 | 22,035 | 26,122 | 2,692 | 22,746 | 122,685 |
| Massachusetts | 57,872 | 7,199 | 58,741 | 72,242 | 2,967 | 45,313 | 244,334 |
| Michigan | 116,384 | 4,483 | 44,659 | 21,345 | 8,449 | 44,459 | 239,779 |
| Minnesota | 52,584 | 4,392 | 26,845 | 5,213 | 8,315 | 22,159 | 119,508 |
| Mississippi | 31,325 | 506 | 14,260 | 20,507 | 8,420 | 17,072 | 92,090 |
| Missouri | 68,336 | 7,025 | 20,042 | 3,647 | 13,245 | 25,564 | 137,859 |
| Montana | 11,476 | 573 | 8,194 | 2,414 | 1,370 | 5,470 | 29,497 |
| Nebraska | 22,372 | 1,057 | 10,966 | 1,237 | 5,930 | 9,460 | 51,022 |
| Nevada | 11,068 | 4,568 | 3,055 | 1,455 | 426 | 4,679 | 25,251 |
| New Hampshire | 10,559 | 92 | 8,231 | 5,916 | 1,895 | 6,082 | 32,775 |
| New Jersey | 82,211 | 4,244 | 60,329 | 63,770 | 3,145 | 48,654 | 262,353 |
| New Mexico | 18,556 | 928 | 9,234 | 1,503 | 2,523 | 7,459 | 40,203 |
| New York | 145,771 | 31,626 | 114,320 | 159,247 | 5,873 | 104,000 | 560,837 |
| North Carolina | 74,371 | 1,814 | 26,601 | 13,481 | 5,599 | 27,743 | 149,609 |
| North Dakota | 10,780 | 352 | 3,982 | 889 | 1,597 | 4,002 | 21,602 |
| Ohio | 129,664 | 5,437 | 52,405 | 13,897 | 7,924 | 47,659 | 256,986 |
| Oklahoma | 45,248 | 2,293 | 13,131 | 752 | 8,794 | 15,988 | 86,206 |
| Oregon | 32,161 | 2,242 | 16,794 | 3,570 | 750 | 12,622 | 68,139 |
| Pennsylvania | 121,88 | 7,526 | 78,143 | 61,883 | 6,032 | 62,717 | 338,189 |
| Rhode Island | 9,449 | 215 | 8,199 | 4,678 | 601 | 5,266 | 28,408 |
| South Carolina | 38,956 | 602 | 12,960 | 13,570 | 3,698 | 15,886 | 85,672 |
| South Dakota | 11,652 | 291 | 3,042 | 305 | 3,779 | 4,335 | 23,404 |
| Tennessee | 58,902 | 3,925 | 24,146 | 3,296 | 3,550 | 21,356 | 115,175 |
| Texas | 202,463 | 19,407 | 74,678 | 53,419 | 27,318 | 85,883 | 463,168 |
| Utah | 17,004 | 1,413 | 8,631 | 4,565 | 929 | 7,408 | 39,950 |
| Vermont | 6,194 | 88 | 5,267 | 1,136 | 948 | 3,111 | 16,744 |
| Virginia | 65,533 | 8,397 | 27,659 | 39,395 | 3,311 | 32,844 | 177,139 |
| Washington | 46,277 | 7,974 | 19,800 | 9,483 | 958 | 19,240 | 103,732 |
| West Virginia | 21,460 | 239 | 9,019 | 4,039 | 848 | 8,109 | 43,714 |
| Wisconsin | 56,106 | 2,045 | 31,797 | 2,611 | 10,720 | 23,524 | 126,803 |
| Wyoming | 8,605 | 205 | 9,211 | 2,527 | 1,583 | 5,036 | 27,167 |
| Dist. of Columbia | 5,389 | 0 | 4,005 | 4,989 | ** | 3,277 | 17,660 |
| TOTAL U.S | 2,690,005 | 275,549 | 1,230,993 | 1,120,096 | 284,040 | 1,274,989 | 6,875,672 |

*Does not include aviation fuel for military use.

**Dist. of Columbia included in Maryland.

Source: Federal Highway Administration, U.S. Department of Energy, and Ethyl Corporation.

# Statistical Summary of the Petroleum Producing Industry — 1949-1978

| Year | PRODUCTION |  |  | IMPORTS[3] |  |  | OTHER SUPPLY[1] | TOTAL SUPPLY | PETROLEUM DEMAND |  |  | CRUDE OIL VALUE | CRUDE OIL PRICE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Crude Oil (1,000 B/D) | Nat. Gas Liquids (1,000 B/D) | Total (1,000 B/D) | Crude Oil (1,000 B/D) | Refined Products (1,000 B/D) | Total (1,000 B/D) | (1,000 B/D) | (1,000 B/D) | Domestic (1,000 B/D) | Export (1,000 B/D) | Total (1,000 B/D) | (Mil. $) | $ per Bbl. |
| 1949 | 5,047 | 431 | 5,478 | 421 | 224 | 645 | — | 6,123 | 5,803 | 327 | 6,130 | 4,675 | 2.54 |
| 1950 | 5,407 | 499 | 5,906 | 487 | 363 | 850 | 2 | 6,758 | 6,509 | 305 | 6,814 | 4,963 | 2.51 |
| 1951 | 6,158 | 562 | 6,720 | 491 | 353 | 844 | 7 | 7,571 | 7,060 | 422 | 7,482 | 5,690 | 2.53 |
| 1952 | 6,256 | 612 | 6,868 | 573 | 379 | 952 | 7 | 7,827 | 7,283 | 436 | 7,719 | 5,785 | 2.53 |
| 1953 | 6,458 | 655 | 7,113 | 648 | 386 | 1,034 | 20 | 8,167 | 7,624 | 401 | 8,025 | 6,327 | 2.68 |
| 1954 | 6,343 | 692 | 7,035 | 656 | 396 | 1,052 | 23 | 8,110 | 7,784 | 355 | 8,139 | 6,425 | 2.78 |
| 1955 | 6,807 | 772 | 7,579 | 782 | 466 | 1,248 | 34 | 8,861 | 8,493 | 368 | 8,861 | 6,870 | 2.77 |
| 1956 | 7,151 | 801 | 7,952 | 934 | 502 | 1,436 | 43 | 9,431 | 8,822 | 430 | 9,252 | 7,297 | 2.79 |
| 1957 | 7,170 | 809 | 7,979 | 1,023 | 552 | 1,574 | 42 | 9,595 | 8,860 | 568 | 9,428 | 8,079 | 3.09 |
| 1958 | 6,710 | 808 | 7,518 | 953 | 747 | 1,700 | 64 | 9,282 | 9,146 | 276 | 9,422 | 7,380 | 3.01 |
| 1959 | 7,053 | 880 | 7,933 | 966 | 815 | 1,780 | 86 | 9,799 | 9,494 | 255 | 9,749 | 7,473 | 2.90 |
| 1960 | 7,035 | 930 | 7,965 | 1,015 | 799 | 1,815 | 146 | 9,926 | 9,807 | 202 | 10,009 | 7,420 | 2.88 |
| 1961 | 7,183 | 991 | 8,174 | 1,045 | 871 | 1,917 | 179 | 10,270 | 9,985 | 174 | 10,159 | 7,566 | 2.89 |
| 1962 | 7,332 | 1,021 | 8,353 | 1,126 | 956 | 2,082 | 175 | 10,610 | 10,410 | 168 | 10,578 | 7,769 | 2.90 |
| 1963 | 7,542 | 1,098 | 8,640 | 1,131 | 992, | 2,123 | 202 | 10,965 | 10,753 | 208 | 10,961 | 7,966 | 2.89 |
| 1964 | 7,614 | 1,155 | 8,769 | 1,198 | 1,060 | 2,258 | 217 | 11,244 | 11,032 | 202 | 11,234 | 8,017 | 2.88 |
| 1965 | 7,804 | 1,210 | 9,014 | 1,238 | 1,230 | 2,468 | 220 | 11,702 | 11,523 | 187 | 11,710 | 8,147 | 2.86 |
| 1966 | 8,295 | 1,284 | 9,579 | 1,225 | 1,348 | 2,573 | 245 | 12,397 | 12,095 | 198 | 12,293 | 8,727 | 2.88 |
| 1967 | 8,810 | 1,410 | 10,220 | 1,128 | 1,409 | 2,537 | 292 | 13,049 | 12,569 | 307 | 12,876 | 9,375 | 2.91 |
| 1968 | 9,096 | 1,503 | 10,599 | 1,290 | 1,550 | 2,840 | 348 | 13,787 | 13,404 | 231 | 13,635 | 9,795 | 2.94 |
| 1969 | 9,238 | 1,589 | 10,827 | 1,409 | 1,757 | 3,166 | 340 | 14,333 | 14,148 | 233 | 14,381 | 10,427 | 3.09 |
| 1970 | 9,637 | 1,660 | 11,297 | 1,324 | 2,094 | 3,419 | 355 | 15,071 | 14,709 | 259 | 14,968 | 11,174 | 3.18 |
| 1971 | 9,463 | 1,692 | 11,155 | 1,681 | 2,245 | 3,926 | 439 | 15,520 | 15,225 | 224 | 15,449 | 11,693 | 3.40 |
| 1972 | 9,441 | 1,744 | 11,185 | 2,216 | 2,525 | 4,741 | 444 | 16,370 | 16,379 | 223 | 16,602 | 11,707 | 3.39 |
| 1973 | 9,208 | 1,738 | 10,946 | 3,244 | 3,012 | 6,256 | 485 | 17,687 | 17,321 | 231 | 17,552 | 13,058 | 3.89 |
| 1974 | 8,774 | 1,688 | 10,462 | 3,477 | 2,635 | 6,112 | 491 | 17,065 | 16,666 | 220 | 16,886 | 21,581 | 6.74 |
| 1975 | 8,375 | 1,632 | 10,007 | 4,105 | 1,951 | 6,056 | 514 | 16,577 | 16,335 | 209 | 16,544 | 23,116 | 7.56 |
| 1976 | 8,132 | 1,604 | 9,736 | 5,287 | 2,026 | 7,313 | 592 | 17,641 | 17,476 | 223 | 17,699 | 24,230 | 8.14 |
| 1977 | 8,244 | 1,618 | 9,862 | 6,595 | 2,192 | 8,787 | 568 | 19,217 | 18,690 | 243 | 18,447 | 25,791 | 8.57 |
| 1978 | 8,701 | 1,568 | 10,269 | 6,035 | 1,'96 | 8,031 | 611 | 18,911 | 19,199 | 361 | 18,838 | 28,583 | 9.00 |

| Year | NEW WELLS DRILLED |  |  |  |  |  | FOOTAGE DRILLED |  | Total Proved Reserves on Dec. 31† | Total New Reserves Added† | AVERAGE HOURLY EARNINGS |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Oil (No.) | Gas* (No.) | Dry (No.) | Service** (No.) | Total (No.) | Percent Dry | Total (Mil. Ft.) | Per Well Drilled | (Mil. Bbls.) | (Mil. Bbls.) | Crude Oil $ per Hour | All Mfg. Industries $ per Hour |
| 1949 | 22,042 | 2,887 | 12,727 | 2,382 | 39,038 | 32.6 | 138.0 | 3,535 | 28,379 | 3,575 | 1.69 | 1.38 |
| 1950 | 24,430 | 2,843 | 14,757 | 1,249 | 43,279 | 34.1 | 159.3 | 3,681 | 29,536 | 3,329 | 1.72 | 1.44 |
| 1951 | 23,453 | 3,030 | 16,653 | 1,380 | 44,516 | 37.4 | 172.3 | 3,871 | 32,193 | 5,138 | 1.85 | 1.56 |
| 1952 | 23,466 | 3,255 | 17,618 | 1,482 | 45,821 | 38.4 | 187.2 | 4,085 | 32,957 | 3,306 | 1.98 | 1.65 |
| 1953 | 25,762 | 3,806 | 18,449 | 1,262 | 49,279 | 37.4 | 198.8 | 4,034 | 34,383 | 4,040 | 2.10 | 1.74 |
| 1954 | 29,773 | 3,977 | 19,168 | 1,012 | 53,930 | 35.5 | 219.0 | 4,061 | 34,805 | 2,980 | 2.15 | 1.78 |
| 1955 | 31,567 | 3,613 | 20,742 | 760 | 56,682 | 36.6 | 226.3 | 3,992 | 35,451 | 3,386 | 2.20 | 1.86 |
| 1956 | 30,730 | 4,543 | 21,838 | 1,049 | 58,160 | 37.5 | 233.9 | 4,022 | 36,337 | 3,784 | 2.35 | 1.95 |
| 1957 | 28,012 | 4,620 | 20,983 | 1,409 | 55,024 | 38.1 | 233.1 | 4,055 | 35,987 | 2,562 | 2.47 | 2.05 |
| 1958 | 24,578 | 4,803 | 19,043 | 1,615 | 50,039 | 38.1 | 198.2 | 3,961 | 36,740 | 3,466 | 2.54 | 2.11 |
| 1959 | 25,800 | 5,029 | 19,2. .5 | 1,670 | 51,764 | 37.2 | 209.2 | 4,041 | 38,241 | 4,370 | 2.65 | 2.19 |
| 1960 | 21,186 | 5,258 | 17,584 | 2,733 | 46,751 | 37.6 | 190.7 | 4,079 | 38,429 | 3,090 | 2.69 | 2.26 |
| 1961 | 21,101 | 5,664 | 17,106 | 3,091 | 46,962 | 36.4 | 192.1 | 4,091 | 38,835 | 3,353 | 2.80 | 2.32 |
| 1962 | 21,249 | 5,848 | 16,682 | 2,400 | 46,179 | 36.1 | 198.6 | 4,301 | 38,701 | 2,914 | 2.83 | 2.39 |
| 1963 | 20,288 | 4,751 | 16,347 | 2,267 | 46,656 | 37.4 | 184.4 | 4,224 | 38,644 | 3,052 | 2.92 | 2.46 |
| 1964 | 20,620 | 4,855 | 17,488 | 2,273 | 45,236 | 38.7 | 189.9 | 4,198 | 38,738 | 3,274 | 2.95 | 2.53 |
| 1965 | 18,761 | 4,724 | 16,025 | 1,922 | 41,432 | 38.7 | 181.5 | 4,380 | 39,376 | 3,880 | 3.03 | 2.61 |
| 1966 | 16,780 | 4,377 | 15,227 | 1,497 | 37,881 | 40.2 | 166.0 | 4,383 | 39,781 | 3,858 | 3.13 | 2.72 |
| 1967 | 15,329 | 3,659 | 13,246 | 1,584 | 33,818 | 39.2 | 144.7 | 4,280 | 39,991 | 3,892 | 3.25 | 2.83 |
| 1968 | 14,331 | 3,456 | 12,812 | 2,315 | 32,914 | 38.9 | 149.3 | 4,536 | 39,305 | 3,141 | 3.38 | 2.94 |
| 1969 | 14,368 | 4,083 | 13,736 | 1,866 | 34,053 | 40.3 | 160.9 | 4,726 | 37,775 | 2,401 | 3.59 | 3.19 |
| 1970 | 13,020 | 3,840 | 11,260 | 1,347 | 29,467 | 38.2 | 142.4 | 4,834 | 46,704[2] | 12,996[2] | 3.83 | 3.36 |
| 1971 | 11,858 | 3,830 | 10,163 | 1,449 | 27,300 | 37.2 | 128.3 | 4,700 | 45,367 | 2,665 | 4.16 | 3.57 |
| 1972 | 11,306 | 4,928 | 11,057 | 1,464 | 28,755 | 38.5 | 138.4 | 4,809 | 43,125 | 1,796 | 4.46 | 3.81 |
| 1973 | 9,902 | 6,365 | 10,305 | 1,010 | 27,602 | 37.3 | 138.9 | 5,032 | 41,455 | 2,555 | 4.80 | 4.06 |
| 1974 | 12,784 | 7,240 | 11,674 | 1,195 | 32,893 | 35.5 | 153.8 | 4,676 | 40,600 | 2,613 | 5.33 | 4.40 |
| 1975 | 16,408 | 7,580 | 13,247 | 1,862 | 39,097 | 3.9 | 178.5 | 4,566 | 38,950 | 1,937 | 6.05 | 4.80 |
| 1976 | 17,059 | 9,085 | 13,621 | 1,690 | 41,455 | 32.9 | 185.3 | 4,471 | 37,344 | 1,920 | 6.59 | 5.19 |
| 1977 | 18,912 | 11,378 | 14,692 | 1,497 | 46,479 | 31.6 | 215.0 | 4,626 | 35,481 | 1,695 | 7.13 | 5.63 |
| 1978 | 17,775 | 13,064 | 16,218 | 1,456 | 48,513 | 33.4 | 231.4 | 4,770 | 33,730 | 1,943 | 8.12 | 6.14 |

NOTES:

†Includes Natural Gas Liquids.
*Includes condensate wells since 1956.
**Includes stratigraphic and core tests.
[1] Includes net processing gain, unaccounted for crude oil and other hydrocarbons.
[2] Includes Alaskan North Slope.
[3] Excludes U.S. Strategic Storage.

SOURCE: Petroleum Supply, Demand, Crude Oil Value and Crude Oil Price from Energy Information Administration. Wells and Footage Drilled from oil and Gas Journal, A.P.I. and A.A.P.G. Reserves from American Petroleum Institute and American Gas Association. Average Hourly Earnings from U.S. Bureau of Labor Statistics based on 1972 Standard Industrial Classification.

## 1977 RANK OF STATES IN PETROLEUM CONSUMPTION

| State (Rank) | Percent of Consumption |
|---|---|
| California (1) | 10.0 |
| New York (2) | 8.1 |
| Texas (3) | 6.7 |
| Pennsylvania (4) | 4.9 |
| Illinois (5) | 4.6 |
| Florida (6) | 4.5 |
| New Jersey (7) | 3.8 |
| Ohio (8) | 3.7 |
| Massachusetts (9) | 3.5 |
| Michigan (10) | 3.4 |
| Virginia (11) | 2.5 |
| Indiana (12) | 2.5 |
| Louisiana (13) | 2.5 |
| Georgia (14) | 2.2 |
| North Carolina (15) | 2.1 |
| Missouri (16) | 2.0 |
| Wisconsin (17) | 1.8 |
| Maryland (18) | 1.7 |
| Minnesota (19) | 1.7 |
| Tennessee (20) | 1.6 |
| Connecticut (21) | 1.6 |
| Alabama (22) | 1.6 |
| Washington (23) | 1.5 |
| Iowa (24) | 1.3 |
| Mississippi (25) | 1.3 |
| Kentucky (26) | 1.2 |
| Arkansas (27) | 1.2 |
| Oklahoma (28) | 1.2 |
| South Carolina (29) | 1.2 |
| Kansas (30) | 1.1 |
| Colorado (31) | 1.0 |
| Arizona (32) | 1.0 |
| Oregon (33) | 0.9 |
| Maine (34) | 0.7 |
| Nebraska (35) | 0.7 |
| West Virginia (36) | 0.6 |
| Hawaii (37) | 0.6 |
| New Mexico (38) | 0.5 |
| Utah (39) | 0.5 |
| New Hampshire (40) | 0.4 |
| Delaware (41) | 0.4 |
| Montana (42) | 0.4 |
| Alaska (43) | 0.4 |
| Rhode Island (44) | 0.4 |
| Idaho (45) | 0.4 |
| Wyoming (46) | 0.3 |
| Nevada (47) | 0.3 |
| South Dakota (48) | 0.3 |
| North Dakota (49) | 0.3 |
| District of Columbia (50) | 0.2 |
| Vermont (51) | 0.2 |

Source: Based on "Estimated Consumption of Petroleum Products."

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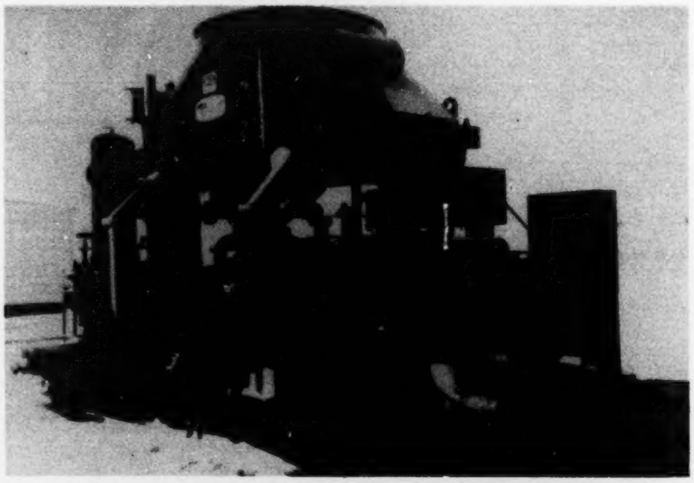
## U.S. Petroleum Demands

| | Petroleum demand (Thous. B/D) | | | % U.S. energy consump. | | |
|---|---|---|---|---|---|---|
| Year | Domestic | Export | Total | Liquid petroleum | Natural gas (dry) | Total |
| 1974 | 16,666 | 220 | 16,886 | 46.0 | 29.9 | 75.9 |
| 1975 | 16,335 | 209 | 16,544 | 46.3 | 28.3 | 74.6 |
| 1976 | 17,476 | 223 | 17,699 | 43.2 | 27.4 | 70.6 |
| 1977 | 18,447 | 243 | 18,690 | 48.6 | 26.0 | 74.6 |
| 1978 | 18,838 | 361 | 19,199 | 48.5 | 25.4 | 73.9 |

Source: U.S. Department of Energy.



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## ADVERTISERS' INDEX

Ariel Corporation 9
Ariel Corporation 101
Armco/National Supply Company 34
Axelson, Inc. 22
CF & I Steel Corporation 14
Cameron Iron Works, Inc. 120
Deposit Guaranty National Bank 56
Dowell Division of Dow Chemical U.S.A. 3
Drilco Division of Smith International, Inc. 96
First National Bank of Denver 33
First National Bank of Shreveport 101
First National Bank & Trust Company of Oklahoma City 95
Fort Worth Pipe & Supply Company 111
Franklin Supply Company 23
Gearhart-Owen Industries, Inc. 113
Halliburton Resource Management 31
Halliburton Services C3
I-R Compression Services 118
Lone Star Steel Company C2
Lufkin Industries, Inc. 106
National Bank of Commerce of Dallas 117
National Bank of Commerce of San Antonio 110
NorthPark National Bank 112
Oilwell Division, U.S. Steel Corporation 15
Otis Engineering Corporation 55
Republic Steel Corporation 98
Sagasity, Inc. 101
Schlumberger Well Services 11
Smith Tool Division of Smith International, Inc. 51
Superior Iron Works & Supply Company, Inc. 95
Tretolite Division, Petrolite Corporation 30
U.S. Steel Corporation 103
United California Bank 17
United Energy Resources 16
Welex, A Halliburton Company C4
Welex, A Halliburton Company 4
Wellhead Compressor Packagers 119
Wheeling Pittsburgh Steel 8
Wilson Industries, Inc. 50

## U.S. ENERGY CONSUMPTION

| | Total | Oil & Gas | Percent Oil & Gas |
|---|---|---|---|
| | Quadrillion Btu's | | |
| 1946 | 3.05 | 14.6 | 47.8 |
| 1947 | 33.0 | 15.9 | 48.2 |
| 1948 | 33.2 | 17.0 | 51.2 |
| 1949 | 31.4 | 17.4 | 55.4 |
| 1950 | 33.9 | 19.6 | 57.9 |
| 1951 | 36.7 | 22.1 | 60.2 |
| 1952 | 36.4 | 23.1 | 63.4 |
| 1953 | 37.5 | 24.3 | 64.7 |
| 1954 | 36.2 | 24.7 | 68.2 |
| 1955 | 39.7 | 26.8 | 67.4 |
| 1956 | 41.7 | 28.5 | 68.3 |
| 1957 | 41.7 | 29.0 | 69.5 |
| 1958 | 41.7 | 30.2 | 72.4 |
| 1959 | 43.1 | 31.7 | 72.9 |
| 1960 | 44.5 | 32.8 | 73.7 |
| 1961 | 45.3 | 33.7 | 73.9 |
| 1962 | 47.4 | 35.4 | 74.1 |
| 1963 | 49.3 | 36.8 | 74.0 |
| 1964 | 51.2 | 38.0 | 73.8 |
| 1965 | 53.3 | 39.3 | 73.8 |
| 1966 | 56.4 | 41.8 | 74.1 |
| 1967 | 58.2 | 43.6 | 74.8 |
| 1968 | 61.7 | 46.6 | 75.5 |
| 1969 | 64.9 | 49.4 | 76.1 |
| 1970 | 67.1 | 51.6 | 76.8 |
| 1971 | 68.3 | 53.0 | 77.6 |
| 1972 | 71.6 | 55.7 | 77.8 |
| 1973 | 74.6 | 57.3 | 76.8 |
| 1974 | 72.8 | 55.2 | 75.8 |
| 1975 | 70.7 | 52.7 | 74.5 |
| 1976 | 74.5 | 55.5 | 74.5 |
| 1977 | 76.5 | 57.1 | 74.6 |
| 1978 | 78.2 | 57.8 | 73.9 |

Source: U.S. Department of Energy.

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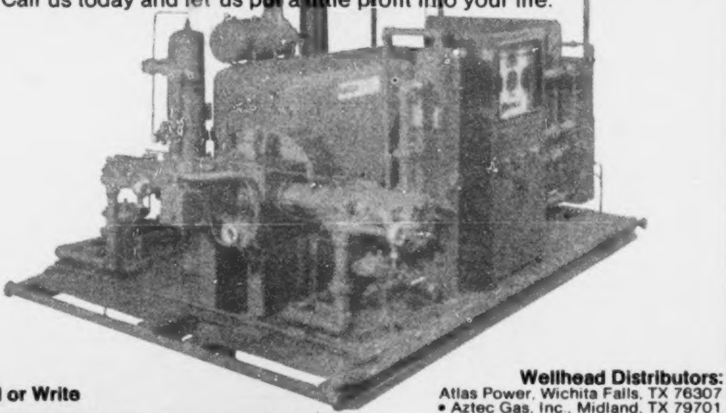

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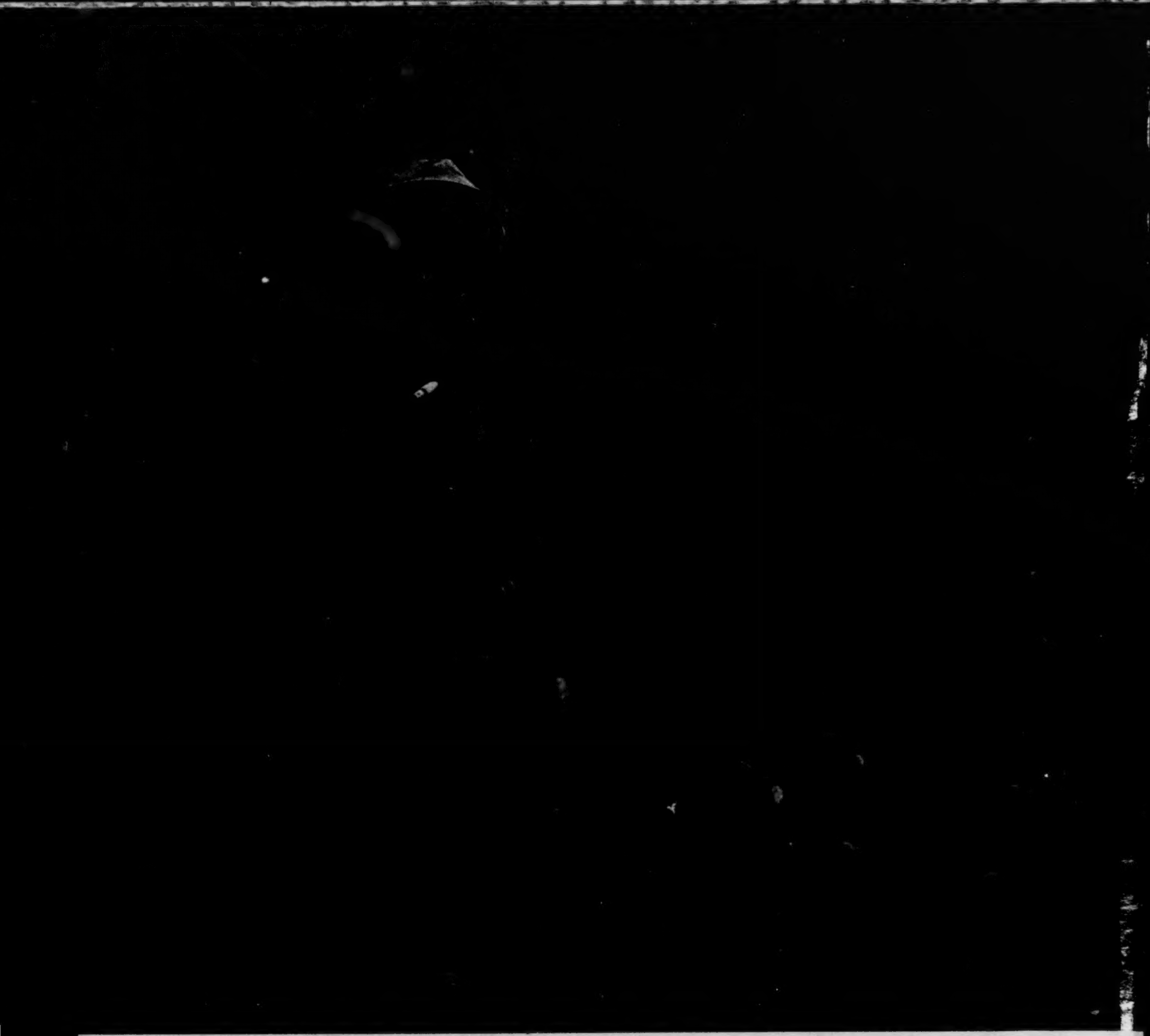
## General Economic Data

| | Consumer Price Index All Items (1967 = 100) | Producer Price Index All Commod. (1967 = 100) | Total Industrial Production (1967 = 100) | Implicit Price Deflator G.N.P. (1972 = 100) |
|---|---|---|---|---|
| 1974 | 147.1 | 160.1 | 124.8 | 116.02 |
| 1975 | 161.2 | 174.9 | 113.8 | 127.15 |
| 1976 | 170.5 | 183.0 | 129.8 | 133.76 |
| 1977 | 181.5 | 194.2 | 138.2 | 141.61 |
| 1978 | 195.3 | 209.3 | 146.1 | 152.09 |

Sources: U.S. Bureau of Labor Statistics, U.S. Dept. of Commerce and Federal Reserve Board.



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CAMERON, WHERE ONE GOOD THING ALWAYS LEADS TO ANOTHER.

# Today, we pump more fluid in 6 seconds than we pumped during the entire first commercial frac job 30 years ago.

Just 30 years ago, on March 17, 1949, we put away 800 gallons of gasoline thickened with aluminum soap and carrying 400 pounds of sand in a well in southern Oklahoma.

Recently, we pumped just over 1,000,000 gallons of fluid, including 920,000 gallons Versagel fluid, and almost 3,000,000 pounds of sand on one job.

Volume is just one measure of how far fracturing has come.

Today, pumps can handle pressures to 20,000 psi. A vast array of complex chemicals can be precisely blended to develop a fluid matched specifically to well conditions. And a wealth of information is available to use to design a treatment.

And, to keep the developments coming, Halliburton makes a substantial and continuing investment in fracturing research and development.

We've come a long way in just thirty years. And we have every plan to go even further in the next thirty.

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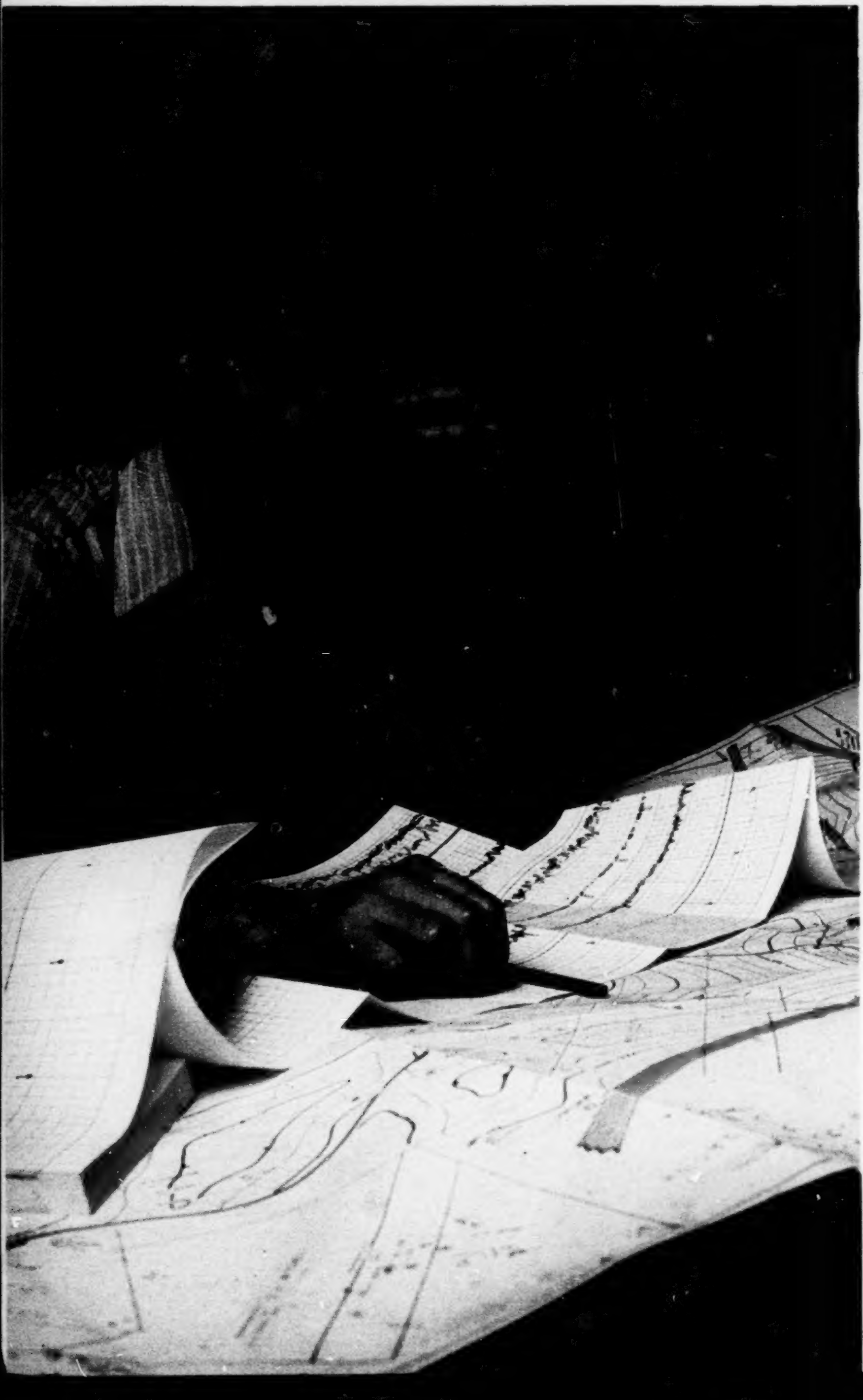

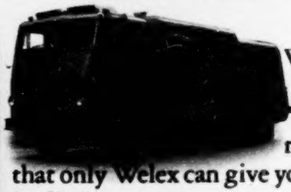

When you're trying to find where your drilling opportunities lie, you'll find that only Welex can give you the total picture in dip log service.

The Welex difference stands out where a dip log means most to you. With the in-depth analysis that improves the odds on success.

Welex gives you more interpretation for your money because our computation beats the competition hands down. The key is a special kind of Welexpert. A member of our corps of trained geologists who know the angles better than any computer running. He can read between the lines to find the most significant geological events. He can even find more in your existing log than you ever thought was there. And he'll give you the most personalized service in the business.

A Welexpert has all the technological resources to provide you with comprehensive data. Our four-arm dip tool gathers accurate information on all of the most important formation characteristics. Where non-cylindrical holes or extreme borehole deviations occur, it supplies highly sophisticated data. Then, we'll furnish you with digital tape and optical film. We offer the log plotting presentation you need. And we'll give you computer or optical correlation.

So, the next time you're looking for opportunities, take the opportunity to call Welex. Because, with a Welexpert's insight, there's a better chance you'll set your sites on profits.

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